

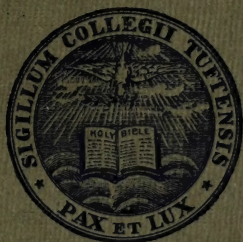


THI  
Tufts College Publications  
New Series, Vol. III, No. 1

# CATALOGUE

OF

# TUFTS COLLEGE




1902-1903

Published December 1, 1902, by the Trustees of Tufts College

---

Entered at the Post-Office at Tufts College, Mass.,  
as Second Class Matter

Published monthly from December to June, inclusive, at Tufts College, Mass., by the Trustees of Tufts College. Copies may be had by addressing the Secretary, HARRY G. CHASE, Tufts College, Mass.

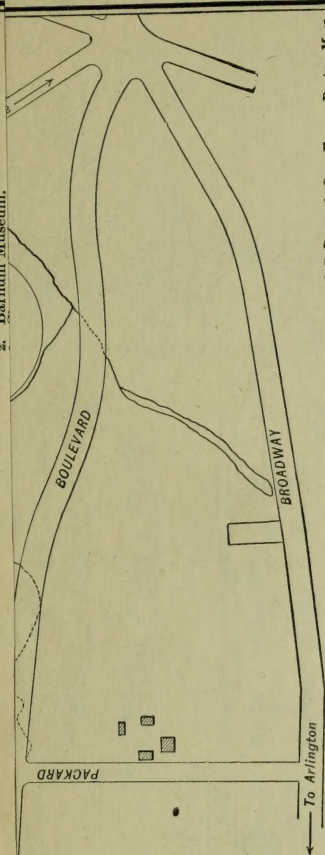
 The post-office address of the College of Letters, including the Department of Engineering, is TUFTS COLLEGE, MASS.

The address of the Bromfield-Pearson School, and of the Divinity School, is TUFTS COLLEGE, MASS.

The address of the Medical and Dental Schools is 416-430 HUNTINGTON AVENUE, BOSTON, MASS.



1. Ballou Hall.
2. Barnum Museum.



*C.T. Peters & Son Engrs., Boston, Mass.*



# A MAP OF THE GROUNDS OF TUFTS COLLEGE



1. Ballou Hall.
2. Barmin Museum.
3. Chemical Laboratory.
4. Goddard Gymnasium.
5. Library.
6. Goddard Chapel.
7. Robinson Hall (Engineering).
8. Bromfield-Pearson School (Engineering).
9. Miner Hall (Theological).
10. West Hall.
11. Vassar Hall.
12. Dean Hall.
13. Metcalf Hall (Women).
14. Fiske Hall (Theological).
15. Commons Hall and Post Office.
16. Tufts Hall.
17. Zeta Psi House.
18. Delta Upsilon House.
19. Delta Tau Delta House.
20. Alpha Tau Omega House.
21. Railroad Station.
22. Pres. Capen.
23. Prof. Anthony.
24. Lewis.
25. " "
26. " "
27. " "
28. " "
29. " "
30. " "
31. " "
32. " "
33. " "
34. " "
35. " "
36. " "
37. " "
38. " "
39. Prof. Harmon.
40. " "
41. Prof. Mulaby.
42. Prof. Wren.
43. Start House.
44. Miss Mellen.
45. Prof. Bolles.
46. " "
47. H. T. Brown.
48. Dr. Stroud.

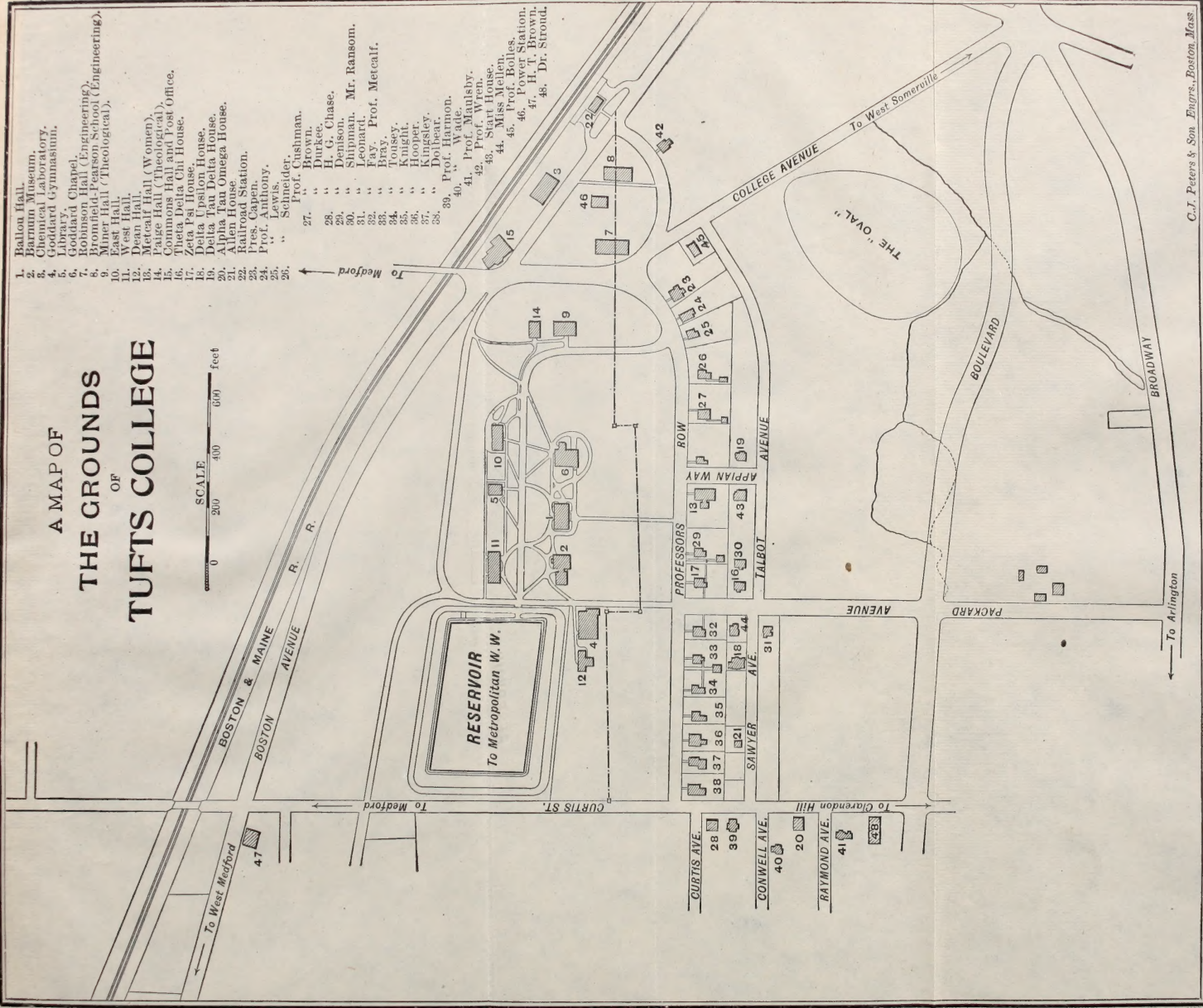








PHOTO. BY E. C. HARTSHORN

THE COLLEGE FROM POWDER HOUSE SQUARE



# CATALOGUE

OF

# TUFTS COLLEGE



1902-1903

TUFTS COLLEGE PRESS

1902

Withdrawn

THE

AMERICAN BOOK

COMPANY

TUFTS COLLEGE PRESS  
H. W. WHITEMORE & CO.  
1902



# Calendar

1902

1903

SEPTEMBER							JANUARY							MAY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3						1	2
7	8	9	10	11	12	13	4	5	6	7	8	9	10	3	4	5	6	7	8	9
14	15	16	17	18	19	20	11	12	13	14	15	16	17	10	11	12	13	14	15	16
21	22	23	24	25	26	27	18	19	20	21	22	23	24	17	18	19	20	21	22	23
28	29	30					25	26	27	28	29	30	31	24	25	26	27	28	29	30
OCTOBER							FEBRUARY							JUNE						
			1	2	3	4	1	2	3	4	5	6	7		1	2	3	4	5	6
5	6	7	8	9	10	11	8	9	10	11	12	13	14	7	8	9	10	11	12	13
12	13	14	15	16	17	18	15	16	17	18	19	20	21	14	15	16	17	18	19	20
19	20	21	22	23	24	25	22	23	24	25	26	27	28	21	22	23	24	25	26	27
26	27	28	29	30	31									28	29	30				
NOVEMBER							MARCH							JULY						
						1	1	2	3	4	5	6	7			1	2	3	4	
2	3	4	5	6	7	8	8	9	10	11	12	13	14	5	6	7	8	9	10	11
9	10	11	12	13	14	15	15	16	17	18	19	20	21	12	13	14	15	16	17	18
16	17	18	19	20	21	22	22	23	24	25	26	27	28	19	20	21	22	23	24	25
23	24	25	26	27	28	29	29	30	31					26	27	28	29	30	31	
30																				
DECEMBER							APRIL							AUGUST						
	1	2	3	4	5	6				1	2	3	4							1
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30	31				26	27	28	29	30			23	24	25	26	27	28	29
														30	31					

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. The post-office address is — TUFTS COLLEGE, MASS.

113666

43381

WILSON

# Contents

	PAGE		PAGE
PLAN OF THE COLLEGE		Economics and Sociology . . . . .	76
Grounds (next to front cover).		Mathematics . . . . .	78
CALENDAR . . . . .	8	Physics . . . . .	79
HISTORICAL SKETCH . . . . .	11	Astronomy . . . . .	81
The College Charter . . . . .	16	Chemistry . . . . .	81
Constitution of the board of Overseers . . . . .	18	Biology . . . . .	84
		Geology . . . . .	86
ADMINISTRATION		Mineralogy . . . . .	87
TRUSTEES . . . . .	22	Drawing and Shopwork . . . . .	87
OVERSEERS . . . . .	23	Civil and Mechanical Engineering . . . . .	89
BOARDS OF VISITORS . . . . .	24	Electrical Engineering . . . . .	90
OFFICERS OF INSTRUCTION AND GOVERNMENT . . . . .	25	Music . . . . .	91
Proctors . . . . .	32	The Fine Arts . . . . .	93
Editors of Tufts College Studies . . . . .	32	Physical Training . . . . .	93
Curators of Buildings . . . . .	32	TABULAR VIEW OF PROGRAM HOURS	94
THE COLLEGE OF LETTERS		COURSES IN SCIENCE (Leading to Degree of S.B.) . . . . .	99
FACULTY OF THE COLLEGE OF LETTERS . . . . .	35	General Science . . . . .	99
Other Instructors . . . . .	37	Biology . . . . .	101
Standing Committees of the Faculty . . . . .	38	Medical Preparatory . . . . .	101
Requirements for Admission . . . . .	39	Chemistry . . . . .	102
The Primary Group . . . . .	41	DEPARTMENT OF ENGINEERING . . . . .	105
The Secondary Group . . . . .	45	Administrative Board and Instructors . . . . .	105
General Information . . . . .	51	Engineering Courses . . . . .	107
REQUIREMENTS FOR DEGREES . . . . .	53	Civil Engineering . . . . .	108
For A.B. . . . .	53	Mechanical Engineering . . . . .	110
For S.B. . . . .	55	Electrical Engineering . . . . .	112
DEPARTMENTS OF INSTRUCTION		Chemical Engineering . . . . .	114
(Courses in Liberal Arts) . . . . .	57	Mathematics . . . . .	116
Major Departments . . . . .	57	Drawing . . . . .	118
English . . . . .	58	Shopwork . . . . .	120
Oratory . . . . .	61	Chemistry . . . . .	122
German . . . . .	62	Physics and Electricity . . . . .	124
French . . . . .	63	Engineering—Civil and Mechanical . . . . .	128
Italian . . . . .	65	English . . . . .	134
Latin . . . . .	65	Modern Languages . . . . .	136
Greek . . . . .	67	Political Economy . . . . .	136
Classical Archaeology . . . . .	69	Physical Training . . . . .	136
Hebrew . . . . .	69	GRADUATE DEPARTMENT . . . . .	140
Philosophy . . . . .	69	Administrative Board . . . . .	140
Pedagogics . . . . .	72	Instruction . . . . .	140
History and Public Law . . . . .	73	Degrees . . . . .	140
		Departments open for A.M. . . . .	141
		Departments open for Ph.D. . . . .	144



	PAGE
Fellowships . . . . .	145
Tuition . . . . .	146
BUILDINGS AND EQUIPMENT . . . . .	147
GENERAL INFORMATION . . . . .	153
Religious Observances . . . . .	153
Tufts College Studies . . . . .	153
Registration . . . . .	154
Promotion . . . . .	156
Major Subjects . . . . .	156
Admission from other Colleges . . . . .	156
Special Students . . . . .	156
Terms and Vacations . . . . .	157
Absences . . . . .	158
Expenses . . . . .	158
Office Hours . . . . .	160
Scholarships and Other Aids . . . . .	161
Prizes . . . . .	165
Honors and Degrees . . . . .	166

### THE DIVINITY SCHOOL

FACULTY OF THE SCHOOL . . . . .	170
CONDITIONS FOR ADMISSION . . . . .	171
DEPARTMENTS OF INSTRUCTION . . . . .	172
COURSE OF STUDY . . . . .	183
GENERAL INFORMATION . . . . .	185
SCHOLARSHIPS AND AIDS . . . . .	188

### THE MEDICAL SCHOOL

FACULTY OF THE SCHOOL . . . . .	190
Standing Committees of the School . . . . .	194
Dispensary Staff . . . . .	195
GENERAL STATEMENT . . . . .	196
DEPARTMENTS OF INSTRUCTION . . . . .	196
REQUIREMENTS FOR ADMISSION . . . . .	212
ADVANCED STANDING . . . . .	213
PROMOTION . . . . .	213
REQUIREMENTS FOR GRADUATION . . . . .	214
Honors . . . . .	214
Outline of Course . . . . .	215
Examinations . . . . .	216
	PAGE
Text-books . . . . .	217
Expenses . . . . .	218

	PAGE
GENERAL INFORMATION . . . . .	219

### THE DENTAL SCHOOL

FACULTY OF THE SCHOOL . . . . .	224
GENERAL STATEMENT . . . . .	227
COURSE OF INSTRUCTION . . . . .	230
REQUIREMENTS FOR ADMISSION AND	
GRADUATION . . . . .	237
Examinations . . . . .	239
Outline of Course . . . . .	239
Text-books . . . . .	240
Expenses . . . . .	240
GENERAL INFORMATION . . . . .	242
THE BROMFIELD-PEARSON SCHOOL	
BOARD OF INSTRUCTION . . . . .	244
GENERAL STATEMENT . . . . .	245
COURSE OF STUDY . . . . .	246
GENERAL INFORMATION . . . . .	248

### THE SUMMER SCHOOLS

INSTRUCTORS . . . . .	252
THE SUMMER SCHOOL AT TUFTS COL- LEGE . . . . .	253
THE HARPSWELL LABORATORY . . . . .	253

### REGISTER OF STUDENTS

GRADUATE DEPARTMENT . . . . .	256
COURSES IN ARTS AND SCIENCES . . . . .	257
DIVINITY SCHOOL . . . . .	265
BROMFIELD-PEARSON SCHOOL . . . . .	265
MEDICAL SCHOOL . . . . .	266
DENTAL SCHOOL . . . . .	275
THE SUMMER SCHOOL AT TUFTS COLLEGE . . . . .	280
SUMMARY . . . . .	281

### REGISTER OF THE HARPSWELL LABORATORY

	282
DEGREES AND HONORS	
FORTY-SIXTH ANNUAL COMMENCE- MENT (Degrees Conferred) . . . . .	284
AWARDS OF PRIZES . . . . .	289

# Calendar

---

## 1902

- SEPT. 18. College year begins (all departments except the Medical and Dental Schools), Thursday morning.
- SEPT. 20. Regular college exercises begin.
- SEPT. 21. Russell Lecture, Sunday, 7.30 P.M.
- OCT. 1. Lectures begin in the Medical and Dental Schools, Wednesday.
- NOV. 26. Thanksgiving recess begins, Wednesday, at 1 P.M.
- NOV. 30. Thanksgiving recess ends, Sunday evening.
- DEC. 3. Announcement of Commencement Parts and Prizes.
- DEC. 23. Christmas recess begins, Tuesday evening.

## 1903

- JAN. 6. Christmas recess ends, Tuesday evening.
- JAN. 29. Final examinations begin in the College of Letters, Thursday.
- FEB. 7. End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
- FEB. 9. Second half-year begins, Monday.
- FEB. 22. Washington's Birthday. College exercises suspended.
- APRIL 1. Spring recess begins, Wednesday evening.
- APRIL 8. Spring recess ends, Wednesday evening.
- APRIL 19. Patriots' Day. College exercises suspended.
- MAY 15. Prize Reading in the College of Letters, Friday, 3 P.M.
- MAY 26. Prize Reading in the Divinity School, Tuesday, 3 P.M.
- MAY 30. Memorial Day. College exercises suspended.
- JUNE 2. Final examinations begin in the College of Letters, Tuesday.
- JUNE 8. Entrance examinations at the Medical and Dental Schools, Monday.
- JUNE 12. Class Day, Friday.
- JUNE 14. Baccalaureate Sermon, Sunday, 4.30 P.M.
- JUNE 17. Forty-seventh Annual Commencement, Wednesday.

### First Examination for Admission to the College of Letters

- JUNE 18. Algebra, 9 to 10.30 A.M.  
English, 10.30 A.M. to 12.30 P.M.  
Plane Geometry, 2 to 4 P.M.  
Physics, 4 to 5 P.M.



Drawing, 4 to 6 P.M.

- JUNE 19. Elementary and Advanced Latin, 9 to 12 A.M.  
 Advanced Mathematics, 9 to 11 A.M.  
 Natural History (two subjects), 11 A.M. to 1 P.M.  
 History, 2 to 4 P.M.  
 Chemistry, 4 to 5 P.M.
- JUNE 20. Elementary and Advanced Greek, 9 to 12 A.M.  
 Intermediate and Advanced German and French, 9 to 11 A.M.  
 Elementary German and French, 11 A.M. to 12.30 P.M.
- JUNE 22 to SEPT. 15. Session of the Harpswell Laboratory.
- JULY 6 to AUGUST 15. Session of the Summer School at Tufts College.

---

### Second Examination for Admission to the College of Letters

- SEPT. 14. Elementary and Advanced Greek, 9 to 12 A.M.  
 Intermediate and Advanced German and French, 2.30 to 5 P.M.  
 Elementary German and French, 1 to 2.30 P.M.
- SEPT. 15. Algebra, 9 to 10.30 A.M.  
 English, 10.30 A.M. to 12.30 P.M.  
 Plane Geometry, 2 to 4 P.M.  
 Physics, 4 to 5 P.M.  
 Drawing, 4 to 6 P.M.
- SEPT. 16. Elementary and Advanced Latin, 9 to 12 A.M.  
 Advanced Mathematics, 9 to 11 A.M.  
 Natural History (two subjects), 11 A.M. to 1 P.M.  
 History, 2 to 4 P.M.  
 Chemistry, 4 to 5 P.M.
- 
- SEPT. 16. Examination for Admission to the Divinity School, in Miner Hall, Beginning at 9 A.M.
- SEPT. 17. College year begins, Thursday morning.  
 Registration of all students at the Secretary's office.  
 Major departments and plans of study for the first half-year must be reported before noon of this day.
- SEPT. 19. Regular College exercises begin.
- SEPT. 20. Russell Lecture, Sunday.
- OCT. 3. Entrance examinations at the Medical and Dental Schools, Saturday.
- OCT. 6. Lectures begin in the Medical and Dental Schools, Tuesday.
- NOV. 25. Thanksgiving recess begins, Wednesday; at 1 P.M.
- NOV. 29. Thanksgiving recess ends, Sunday evening.



## Historical Sketch.

---

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

**The Foundation.**—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to



it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

“No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain.”

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

**The College of Letters.**—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first presi-

dent of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of Electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natur-

al History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the



work in political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Mr. Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

**The Professional Schools.**—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time,

largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

**Administration.**—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

### THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to

determine what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers, to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote

the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

### THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established; a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A.B., S.B., or Ph.B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committee, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.



The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.



THE ADMINISTRATION  
OF THE COLLEGE

# The Trustees

---

## President

HENRY BREWER METCALF

## Vice-President

HOSEA MORRILL KNOWLTON

## Secretary

HENRY WARREN RUGG, Providence, R. I.

## Treasurer

NEWTON TALBOT, 30 West Street, Boston

## Executive Committee

FREDERICK WILLIAM HAMILTON, *Chairman*

ELMER HEWITT CAPEN	THOMAS HENRY ARMSTRONG
LORIN LOW DAME	HENRY DUDLEY WILLIAMS
BYRON GROCE	SUMNER ROBINSON
ALBERT METCALF	HENRY WARREN RUGG

## Committee on Finance

WILLIAM HENRY SHERMAN, *Chairman*

WALTER EDWARD PARKER	ARTHUR ELLERY MASON
WILLIAM WALDEMAR SPAULDING,	J. FRANK WELLINGTON

## Trustees

TIMOTHY THOMPSON SAWYER . . . . .	Boston
NEWTON TALBOT, A.M. . . . .	Boston
ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . .	Somerville
CHARLES SCOTT FOBES, A.M. . . . .	Portland, Me.
HOSEA MORRILL KNOWLTON, A.B., LL.D. . . . .	New Bedford
THOMAS HENRY ARMSTRONG, A.M. . . . .	Waltham
HENRY WARREN RUGG, D.D. . . . .	Providence, R. I.
JOHN COLEMAN ADAMS, A.M., D.D. . . . .	Hartford, Conn.
BYRON GROCE, A.M., Litt.D. . . . .	Boston
ARTHUR ELMER DENISON, A.B. . . . .	Cambridge
HENRY DUDLEY WILLIAMS, A.M. . . . .	Boston
WILLIAM OSCAR CORNELL . . . . .	Providence, R. I.
HOSEA WASHINGTON PARKER, A.M. . . . .	Claremont, N. H.



WALTER EDWARD PARKER, A.M. . . . .	Lawrence
HENRY BREWER METCALF, A.M. . . . .	Pawtucket, R. I.
WILLIAM WALDEMAR SPAULDING, A.B. . . . .	Haverhill
DAVID CUMMINGS . . . . .	Somerville
FRED STARK PEARSON, A.M.M., S.D. . . . .	New York, N.Y.
CHARLES EWELL MORRISON . . . . .	Boston
SUMNER ROBINSON, A.M., LL.B. . . . .	Newton
WILLIAM HENRY SHERMAN . . . . .	Boston
ALBERT METCALF, A.M. . . . .	Newton
JOHN WILKES HAMMOND, A.B., LL.D. . . . .	Cambridge
FREDERICK WILLIAM HAMILTON, A.M.; D.D. . . . .	Boston
LORIN LOW DAME, A.M., S.D. . . . .	Medford
J. FRANK WELLINGTON . . . . .	Somerville
WILLIAM ERASTUS GIBBS, A.B., D.D. . . . .	Lawrence
ARTHUR ELLERY MASON . . . . .	Boston
ROBERT ROBBINS ANDREWS, D.D.S. . . . .	Cambridge

---

## The Overseers

---

### President

WALTER PARKER BECKWITH, A.M., Ph.D.

### Secretary

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

### Term expires in 1903

ALPHONSUS HOLLAND CARVILL, A.M., M.D.

EDWIN GINN, A.M., Litt.D.

FRANK MORTIMER HAWES, A.M.

FRANK THOMAS DANIELS, A.M.B.

### Term expires in 1904

WILLIAM BRADFORD FRENCH, A.B.

FRANCIS BISHOP HARRINGTON, A.B., M.D.

FRANK OTIS MELCHER, C.E.

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

### Term expires in 1905

WALTER PARKER BECKWITH, A.M., Ph.D.

HENRY BLANCHARD, A.M., D.D.

WILLIAM DAVIS THAYER TREFRY, A.B.

MINTON WARREN, Ph.D., LL.D.

**Term expires in 1906**

EDWARD HENRY CLEMENT, A.M.

ARTHUR WINSLOW PEIRCE, Litt.D.

SAMUEL WARREN MENDUM, A.M.

MILTON GERRY STARRETT, A.M.B.

**BOARDS OF VISITORS**

[Appointed by the Overseers]

**To the College of Letters**

WALTER PARKER BECKWITH, A.M., Ph.D.

EDWARD HENRY CLEMENT, A.M.

WILLIAM BRADFORD FRENCH, A.B.

MILTON GERRY STARRETT, A.M.B.

ARTHUR EVERETT PETERSON, A.M.

**To the Divinity School**

ARTHUR WINSLOW PEIRCE, Litt.D.

FRANK MORTIMER HAWES, A.M.

FRANK THOMAS DANIELS, A.M.B.

DWIGHT M. HODGE, D.D.

FREDERICK WILLIAMS PERKINS, B.D., A.M.

**To the Medical School**

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

ALPHONSUS HOLLAND CARVILL, A.M., M.D.

ELMON ARTHUR BURNHAM, A.B., M.D.

BYRON LEE DWINELL, A.B., M.D.

HORACE PERKINS MACKECHNIE, A.B., M.D.

**To the Dental School**

WILLIAM DAVIS THAYER TREFRY, A.B.

EDWIN GINN, A.M., Litt.D.

SAMUEL WARREN MENDUM, A.M.

HENRY S. DRAPER, D.D.S.

EDWIN ELWELL DAVIS, A.B., D.D.S.

**Directors of the Women**

[Appointed by the Trustees]

MRS. MARY LEAVITT CAPEN

MRS. SUSAN PEARSON ANTHONY

MRS. MARY INGRAHAM WREN

## Officers of Instruction and Government\*

ELMER HEWITT CAPEN, A.M., D.D., LL.D.	8	Professors Row
<i>PRESIDENT, and Professor of Moral Philosophy and Political Economy</i>		
CHARLES HALL LEONARD, A.M., D.D.	120	Packard Ave.
<i>Goddard Professor of Homiletics and Pastoral Theology, and Dean of the Divinity School</i>		
JEROME SCHNEIDER, Ph.D.	28	Professors Row
<i>Professor of Greek</i>		
EDWIN CORTLAND BOLLES, Ph.D., D.D.	184	College Ave.
<i>Dickson Professor of English and American History</i>		
BENJAMIN GRAVES BROWN, A.M.	38	Professors Row
<i>Walker Professor of Mathematics</i>		
WILLIAM ROLLIN SHIPMAN, A.M., D.D., LL.D.	101	Talbot Ave.
<i>Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of the Faculty of the College of Letters</i>		
HENRY WATSON DUDLEY, M.D.		Abington
<i>Professor of Pathology, Emeritus, and Lecturer on Legal Medicine</i>		
CHARLES PAINE THAYER, A.M., M.D.		Tufts College Medical School
<i>Professor of General, Descriptive, and Applied Anatomy, and Secretary of the Medical and Dental Schools</i>		
JOHN LEWIS HILDRETH, A.B., M.D., LL.D.		
<i>Professor of Clinical Medicine, Emeritus</i>		
CHARLES DURLIN BRAY, C.E., A.M.	98	Professors Row
<i>Professor of Mechanical Engineering</i>		
AMOS EMERSON DOLBEAR, M.E., Ph.D., LL.D.	134	Professors Row
<i>Professor of Physics and Astronomy</i>		
ERNEST WATSON CUSHING, A.B., M.D., LL.D.		
<i>168 Newbury St., Boston</i>		
<i>Professor of Abdominal Surgery and Gynaecology</i>		
GEORGE MILFORD HARMON, A.M., D.D.	114	Curtis St.
<i>Professor of Biblical Theology</i>		
HENRY JABEZ BARNES, M.D.	429	Beacon St., Boston
<i>Professor of Hygiene</i>		
WALTER CHANNING, M.D., LL.D.		Brookline
<i>Professor of Mental Diseases</i>		
CHARLES ERNEST FAY, A.M., Litt.D.	92	Professors Row
<i>Wade Professor of Modern Languages</i>		
WILLIAM GEORGE TOUSEY, A.M., D.D.	106	Professors Row
<i>Ryder Professor of Ethics and the Philosophy of Theism</i>		
GEORGE THOMSON KNIGHT, A.M., D.D.	114	Professors Row
<i>Packard Professor of Christian Theology, and Secretary of the Divinity School</i>		
EDWARD OSGOOD OTIS, A.B., M.D.	381	Beacon St., Boston
<i>Professor of Pulmonary Diseases and Climatology</i>		

\*The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course.

- EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge  
*Instructor in Clinical Dentistry*
- CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree  
*Professor of General Chemistry*
- WARREN SAMUEL WOODBRIDGE, A.M., B.D. 32 Pearl St., Medford  
*Woodbridge Professor of Applied Christianity*
- 
- Pearson Professor of Geology and Mineralogy*
- JOHN STERLING KINGSLEY, S.D. . . . . 128 Professors Row  
*Professor of Biology*
- ARTHUR MICHAEL, A.M., PH.D. . . . . 44 Mt. Vernon St., Boston  
*Professor of Chemistry*
- MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston  
*Professor of Diseases of the Nervous System*
- HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston  
*Professor of the Theory and Practice of Medicine, and Dean of the  
Medical and Dental Schools*
- HENRY BECKLES CHANDLER, C.M., M.D. . Hotel Tudor, Boston  
*Professor of Ophthalmology*
- SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.  
235 Marlborough St., Boston  
*Professor of the Theory and Practice of Dentistry*
- HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury  
*Assistant Professor of the Theory and Practice of Medicine*
- GARDNER WELD ALLEN, A.B., M.D.  
Warren Chambers, 419 Boylston St., Boston  
*Instructor in Genito-Urinary Surgery*
- WILLIAM LESLIE HOOPER, A.M., PH.D. . . . 124 Professors Row  
*Professor of Electrical Engineering*
- JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston  
*Assistant Professor of Dermatology*
- BYRON HOWARD STROUT, D.D.S. . . . . Taunton  
*Lecturer on Operative Technics, and Instructor in Anaesthesia*
- GARDNER CHACE ANTHONY, A.M. . . . . 14 Professors Row  
*Professor of Technical Drawing, and Dean of the Department of Engin-  
eering.*
- EDWARD WALTER BRANIGAN, D.D.S.  
*Professor of Clinical Dentistry* 2 Commonwealth Ave., Boston
- FREDERIC MELANCTHON BRIGGS, A.B., M.D.,  
*Professor of Clinical Surgery* 31 Massachusetts Ave., Boston
- HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston  
*Assistant Professor of Clinical Medicine*
- FREDERIC LAFAYETTE JACK, M.D., . . . 215 Beacon St., Boston  
*Professor of Otology*
- JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park  
*Professor of Prosthodontia*
- FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington  
*Professor of Materia Medica and Therapeutics*
- GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Dental Histology*



- JOHN CUMMINGS MUNRO, A.B., M.D. . . 173 Beacon St., Boston  
*Professor of Oral Surgery*
- EDWARD LAMBERT TWOMBLY, A.B., M.D.  
*Instructor in Clinical Medicine* 406 Massachusetts Ave., Boston
- GEORGE HAMLIN WASHBURN, A.B., M.D.  
*Professor of Obstetrics* 377 Marlborough St., Boston
- ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road, Boston  
*Professor of Medical Chemistry and Toxicology*
- GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville  
*Instructor in Prosthetic Dentistry*
- FRED CARVILL MERRILL, D.D.S., . . . . . Wollaston  
*Instructor in Prosthetic Dentistry*
- FREDERICK MORTIMER HEMENWAY, D.D.S.  
*Professor of Prosthetic Dentistry* 88 Boylston St., Boston
- WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- HORACE DAVID ARNOLD, A.B., M.D. . . 188 Warren St., Roxbury  
*Professor of Clinical Medicine*
- WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- HENRY HILDRETH PIPER, D.D.S. . . . Winter Hill, Somerville  
*Instructor in Clinical Dentistry*
- GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston  
*Instructor in Otology*
- KARL AUGUST HOCH, M.D. . . . . MacLean Asylum, Waverley  
*Instructor in Neuro-Pathology*
- GEORGE WARTON KAN, M.D. . . . . Hotel Oxford, Boston  
*Assistant Professor of Clinical Gynaecology*
- JOSEPH CYRUS STEDMAN, M.D.  
*Instructor in Rectal Diseases*, Warren Chambers, Boylston St., Boston
- JOHN JENKS THOMAS, A.M., M.D. . . . 88 Bay State Road, Boston  
*Instructor in Neurology*
- WILLIAM ELISHA CHENERY, M.D. . . . . 415 Columbus Ave.  
*Assistant Professor of Laryngology*
- HERBERT ERNEST CUSHMAN, A.M., B.D., PH.D. 28 Professors Row  
*Professor of Philosophy*
- LEO RICH LEWIS, A.M. . . . . 20 Professors Row  
*Professor of the History and Theory of Music*
- KNUT JOSEPH LUTTROPP, D.D.S., . . . 419 Boylston St., Boston  
*Demonstrator in Operative Dentistry*
- DAVID LEE MAULSBY, A.M. . . . . 80 Curtis St.  
*Professor of English Literature and Oratory*
- FRANK BERRY SANBORN, C.E., M.S.  
*Professor of Civil Engineering* 10 Buena Vista Park, N. Cambridge
- FRANK WILLIAMS DURKEE, A.M. . . . . 38 Professors Row  
*Professor of Inorganic Chemistry*
- JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*

EDMUND CHANNING STOWELL, A.B., M.D.

9 Massachusetts Ave., Boston

*Assistant Professor of Children's Diseases*

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston

*Instructor in Clinical Medicine, and Lecturer on Gastro-Intestinal Diseases*

THEODORE CHARLES ERB, M.D. . . 159 St. Botolph St., Boston

*Instructor in Obstetrics*

ROBERT WORTHINGTON HASTINGS, A.M., M.D.

Kilsyth Road, Brookline

*Instructor in the Theory and Practice of Medicine, and Assistant in Pediatrics*

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury

*Instructor in Pathology and Bacteriology*

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury

*Demonstrator of Anatomy*

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.

*Assistant Professor of Physiology* 150 St. Botolph St., Boston

WARREN FISHER GAY, A.B., M.D. . . 416 Marlborough St., Boston

*Instructor in Surgery, and Assistant in Surgical Pathology*

EDWARD HENRY ROCKWELL, B.S. . . . . Allston

*Instructor in Civil Engineering*

EDWARD ELIPHALET THORPE, M.D. 711 Boylston Street, Boston

*Instructor in Medical Chemistry*

WILLIAM KENDALL DENISON, A.M. . . . . 72 Professors Row

*Professor of the Latin Language and Literature*

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston

*Instructor in Clinical Surgery*

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury

*Professor of Pathology and Bacteriology*

CHARLES FAIRBANK PAINTER, A.B., M.D.

*Instructor in Orthopedic Surgery* 86 Bay State Road, Boston

CHARLES HARRIS CHASE, S.B. . . . . Stoneham

*Assistant Professor of Steam Engineering*

JOHN INNES FRENCH, M.D., . . . . . 2A Park St., Boston

*Instructor in Materia Medica and Therapeutics, and Assistant in Clinical Medicine*

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham

*Instructor in Clinical Dentistry*

RICHARD FROTHINGHAM O'NEIL, A.B., M.D.

416 Marlborough St., Boston

*Demonstrator of Surgical Apparatus and Bandaging*

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.

*Assistant Professor of Physics, and Secretary of the College of Letters*

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston

*Instructor in Clinical Dentistry*

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury

*Instructor in Obstetrics, and Assistant in Clinical Medicine*

ELIZABETH ANGELA RILEY, M.D., . . . 483 Beacon St., Boston

*Instructor in Gynaecology and Abdominal Surgery*

- FRANK LEE DRUMMOND RUST, M.D. . . 543 Boylston St., Boston  
*Assistant Professor of Ophthalmology*
- FREDERICK BOOTH STEVENS, D.D.S. . . . Everett Sq., Hyde Park  
*Instructor in Clinical Dentistry*
- SAMUEL CHANDLER EARLE, A.M.  
*Assistant Professor of English* . . . 9 Electric Avenue, West Somerville
- LAWRENCE BOYD EVANS, Ph.D. . . . . . 2 Dean Hall  
*Professor of History*
- JAMES WILLIAM HINCKLEY, M.D. . . . 18 Huntington Ave., Boston  
*Instructor in Obstetrics*
- FRED DAYTON LAMBERT, A.M., Ph.D. . . 11 East Hall, Tufts College  
*Instructor in Natural History*
- HENRY CLAYTON METCALF, A.B., Ph.D. . . . 92 Professors Row  
*Jackson Professor of Political Science.*
- CHARLES CRAWFORD STROUD, A.B., M.D. . . . . 72 Curtis St.  
*Medical Director of the Gymnasium, and Instructor in Physical Training*
- CHARLES ST. CLAIR WADE, A.M. . . . . . 16 Conwell Ave.  
*Professor of the Greek Language and Literature*
- THOMAS WHITTEMORE, A.B. . . 372 Massachusetts Ave., Cambridge  
*Assistant Professor of English, and Instructor in the History of Art*
- WALTER FORSYTHE WINCHESTER, D.D.S.  
*Instructor in Prosthetic Dentistry* . . . . . 372 Boylston St., Boston
- FRANK GEORGE WREN, A.M. . . . . . 16 Professors Row  
*Professor of Mathematics*
- ELWOOD TRACY EASTON, M.D. . . . . . 603 Tremont St., Boston  
*Instructor in Ophthalmology*
- WIGHTMAN WELLS GARNER, A.B., Ph.D. . . . . 120 Curtis St.  
*Instructor in Chemistry*
- HORACE SHERIDAN MORAN, M.D. . . . . 86 Warren St., Roxbury  
*Instructor in Obstetrics*
- HARRY CALDWELL PARKER, M.D. . 382 Commonwealth Ave., Boston  
*Instructor in Ophthalmology*
- WILLIAM RICHARD RANSOM, A.M. . . . . . 101 Talbot Ave.  
*Walker Special Instructor in Mathematics*
- FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston  
*Instructor in Electro-Therapeutics and Haematology*
- GEORGE FRANCIS ASHLEY . . . . . 11 Laurel St., Somerville  
*Instructor in Drawing*
- LIZZIE MAUD CARVILL, A.B. . . . . 28 Highland Ave., Somerville  
*Instructor in Physical Training for Women*
- WILLIAM ARNOLD COLWELL . . . . . 17 Conant Hall, Cambridge  
*Instructor in German*
- RALPH WEBSTER RICHARDS, A.M. . . . . . 120 Curtis St.  
*Instructor in Geology*
- EDWIN BUTLER ROLLINS, B.S. . . . . . 1 West Hall  
*Instructor in Electrical Engineering*
- CHARLES EDWARD STEWART, S.B. . . . . . 36 Packard Ave.  
*Instructor in Shopwork*

LESLIE CUSTER WELLS, A.M. . . . . 6 Dean Hall  
*Instructor in French*

### LECTURERS, ASSISTANTS, AND OTHERS

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham  
*Lecturer on Operative Dentistry*

WILLIAM EASTMAN FAY, A.B., M.D. 366 Commonwealth Ave., Boston  
*Assistant in Clinical Medicine*

ARTHUR PATTERSON CHADBURN, A.B., M.D.  
*Assistant in Clinical Medicine* 225 Marlborough St., Boston

CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston  
*Assistant in Clinical Medicine*

DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston  
*Assistant in Clinical Gynaecology*

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston  
*Assistant in Clinical Gynaecology*

ELMON ARTHUR BURNHAM, A.B., M.D.  
*Assistant in Clinical Medicine* 144 Huntington Ave., Boston

ARTHUR WILLARD FAIRBANKS, M.D.  
*Assistant in Clinical Medicine* 422 Massachusetts Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester  
*Assistant in Clinical Medicine*

FREDERICK WARREN PEARL, A.B., M.D.  
 Hotel Vendome, Commonwealth Ave., Boston  
*Assistant in Operative Surgery, and Assistant Demonstrator of  
 Anatomy*

HENRY FOWLER RAINSFORD WATTS, M.D.  
*Assistant in Clinical Medicine* 372 Dorchester Ave., Boston

CHARLES BALFOUR DARLING, A.B., M.D.  
*Assistant in Clinical Gynaecology* 27 Rockville Park, Roxbury

JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass.  
*Assistant in Clinical Medicine*

WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston  
*Assistant in Clinical Gynaecology*

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park  
*Assistant in Anatomy*

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury  
*Assistant in Clinical Medicine*

JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Harvard St., Brookline  
*Assistant in Clinical Medicine*

ADELAIDE OLGA CUSHING-LEARY, M.D.  
*Assistant in Pathology and Bacteriology* Cushing Hospital, Roxbury

HENRY STANLEY WARREN, M.D. . . . 915 Boylston St., Boston  
*Assistant in Orthopedic Surgery*

HEINZ PHILIPP EMIL KOLB, PH.D. . 61 Simpson Ave., Somerville  
*Assistant in Chemistry*



ALONZO KINGMAN PAINE, M.D. . . . .	St. Elizabeth's Hospital
<i>Prosecutor in Anatomy</i>	
WILLARD CHUTE PETERS, M.D. . . . .	Boston City Hospital
<i>Assistant in Histology</i>	
CARL CLIFTON TARBOX, A.B. . . . .	Δ T Δ House
<i>Assistant in Oratory</i>	
RICHARD BRADFORD COOLIDGE, A.B. . . . .	West Hall, 19
<i>Assistant in English</i>	
CHANDLER MASON WOOD . . . . .	Dean Hall, 5
<i>Assistant in History</i>	
JOHN BLACKLER ABBOTT . . . . .	East Hall, 1
<i>Assistant in Chemistry</i>	
MARTIN LATTIMER KIDDER . . . . .	128 Myrtle St., Lynn
<i>Assistant in Mathematics in the Bromfield-Pearson School</i>	

### Laboratory Assistants

L. MARY-BELLE HOLT, B.L. . . . .	Portland, Me
HORACE G. WHEATON . . . . .	Boston
<i>Anatomy</i>	
WILLIAM L. RIPLEY . . . . .	Newton
FREEMAN A. TOWER . . . . .	Boston
MARGARET E. CARLEY . . . . .	Winthrop
WILLIAM D. WALKER . . . . .	Somerville
HARRY W. CLARK . . . . .	N. Woburn
<i>Physiology</i>	
THOMAS W. MURPHY . . . . .	Lawrence
WILLIAM A. DUTCHER . . . . .	Boston
LOUIS MODERNO . . . . .	Cambridge
C. A. SULLIVAN . . . . .	Everett
ADELINE F. DUNHAM . . . . .	Boston
<i>General Chemistry</i>	
GEORGE W. DERRICK . . . . .	Cambridgeport
HORACE K. RICHARDSON, JR. . . . .	Medford
<i>Histology</i>	
JOHN PARR . . . . .	Lawrence
WALTER W. KINGSBURY . . . . .	Walpole
LUTHER G. DEARBORN, JR., A.B. . . . .	Somerville
W. H. NEWTON . . . . .	Worcester
<i>Medical Chemistry</i>	
JOHN J. GIBBONS . . . . .	Clinton
<i>Pharmacology</i>	

### Divinity School

FREDERICK W. HAMILTON, A.M., D.D. . . . .	Roxbury
HENRY W. RUGG, D.D. . . . .	Providence, R. I.
JAMES M. PULLMAN, D.D. . . . .	Lynn
BYRON GROCE, A.M., Litt.D. . . . .	Roxbury
HAROLD WILLIAMS, M.D. . . . .	Boston
<i>Lecturers</i>	

## OTHER OFFICERS

HERBERT TRUE BROWN . . . . .	Tufts College
<i>Bursar</i>	
HARRY GRAY CHASE, B.S. . . . .	2 Curtis Ave.
<i>Registrar</i>	
HELEN LOUISE MELLEN . . . . .	126 Packard Ave.
<i>Librarian</i>	
ETHEL MUNROE HAYES, A.B. . . . .	252 Medford St.
<i>Assistant Librarian</i>	
KATHARINE LOUISE STEBBINS, A.B. . . . .	30 Day St.
<i>Assistant to the Secretary of the College of Letters</i>	
CHARLES CRAWFORD STROUD, A.B., M.D. . . . .	72 Curtis St.
<i>Director of the Gymnasium</i>	
SHERBURNE HILL . . . . .	Δ T House
<i>Assistant in Physical Training</i>	
EDWIN HENRY BENNETT . . . . .	16 Lovell St.
<i>Superintendent of Buildings</i>	
MRS. HARRIET ANNA TURNER	
<i>Matron of Metcalf Hall</i>	
MRS. JENNIE LOUISE PUFFER	
<i>Matron of Start House</i>	

## Proctors

RICHARD B. COOLIDGE . . . . .	West Hall, 19
E. B. ROLLINS . . . . .	West Hall, 4
L. C. WELLS . . . . .	Dean Hall, 6
F. D. LAMBERT . . . . .	East Hall, 11

## Russell Lecturer, 1903

JOHN VANNEVAR, B.D. . . . .	Concord, N. H.
-----------------------------	----------------

## TUFTS COLLEGE STUDIES

## Board of Editors

THE PRESIDENT, *Ex-Officio*

Professor Wade	Professor Dolbear
Professor Knight	Professor Kingsley

## CURATORS OF BUILDINGS

Chapel . . . . .	Professor Lewis
Ballou Hall . . . . .	Professor H. G. Chase
Barnum Museum . . . . .	Professor Kingsley
Gymnasium . . . . .	Dr. Stroud
Miner Hall . . . . .	Dean Leonard
Library . . . . .	Miss Mellen
Robinson Hall . . . . .	Professor Hooper
Chemical Laboratory . . . . .	Professor Michael
Bromfield-Pearson Building . . . . .	Professor Anthony

# THE COLLEGE OF LETTERS





## Faculty of the College of Letters

---

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT

*Professor of Moral Philosophy and Political Economy*

WILLIAM R. SHIPMAN, A.M., D.D., LL.D., DEAN

*Goldthwaite Professor of Rhetoric, and Professor of Logic*

HARRY G. CHASE, B.S., SECRETARY

*Assistant Professor of Physics*

CHARLES H. LEONARD, A.M., D.D.

*Goddard Professor of Homiletics and Pastoral Theology*

JEROME SCHNEIDER, PH.D.

*Professor of Greek*

EDWIN C. BOLLES, PH.D., D.D.

*Dickson Professor of English and American History*

BENJAMIN G. BROWN, A.M.

*Walker Professor of Mathematics*

AMOS E. DOLBEAR, M.E., PH.D., LL.D.

*Professor of Physics and Astronomy*

GEORGE M. HARMON, A.M., D.D.

*Professor of Biblical Theology*

CHARLES D. BRAY, C.E., A.M.

*Professor of Mechanical Engineering*

CHARLES E. FAY, A.M., LITT.D.

*Wade Professor of Modern Languages*

WILLIAM G. TOUSEY, A.M., D.D.

*Professor of Ethics and the Philosophy of Theism*

GEORGE T. KNIGHT, A.M., D.D.

*Packard Professor of Christian Theology*

WARREN S. WOODBRIDGE, A.M., B.D.

*Woodbridge Professor of Applied Christianity*

J. STERLING KINGSLEY, S.D.

*Professor of Biology*

WILLIAM L. HOOPER, A.M., PH.D.

*Professor of Electrical Engineering*

ARTHUR MICHAEL, A.M., PH.D.

*Professor of Chemistry*

GARDNER C. ANTHONY, A.M.

*Professor of Technical Drawing*

HERBERT E. CUSHMAN, B.D., A.M., PH.D.

*Professor of Philosophy*

LEO R. LEWIS, A.M.

*Professor of the History and Theory of Music*

DAVID L. MAULSBY, A.M.

*Professor of English Literature and Oratory*

FRANK B. SANBORN, C.E., M.S.

*Professor of Civil Engineering*

FRANK W. DURKEE, A.M.

*Professor of Inorganic Chemistry*

WILLIAM K. DENISON, A.M.

*Professor of the Latin Language and Literature*

LAWRENCE B. EVANS, PH.D.

*Professor of History.*

HENRY C. METCALF, A.B., PH.D.

*Jackson Professor of Political Science*

CHARLES ST. CLAIR WADE, A.M.

*Professor of the Greek Language and Literature*

FRANK G. WREN, A.M.

*Professor of Mathematics*

CHARLES H. CHASE, S.B.

*Assistant Professor of Steam Engineering*

SAMUEL C. EARLE, A.M.

*Assistant Professor of English*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English, and Instructor in the History of Art*

EDWARD H. ROCKWELL, B.S.

*Instructor in Civil Engineering*

FRED D. LAMBERT, A.M., PH.D.

*Instructor in Natural History*

CHARLES C. STROUD, A.B., M.D.

*Instructor in Physical Training*

WIGHTMAN W. GARNER, PH.D.

*Instructor in Chemistry*

WILLIAM R. RANSOM, A.M.

*Walker Special Instructor in Mathematics*

LIZZIE MAUD CARVILL, A.B.

*Instructor in Physical Training for Women*

WILLIAM A. COLWELL, A.M.

*Instructor in German*

RALPH W. RICHARDS, A.B.

*Instructor in Geology*

EDWIN B. ROLLINS, B.S.

*Instructor in Electrical Engineering*

CHARLES E. STEWART, S.B.

*Instructor in Shopwork*

LESLIE C. WELLS, A.M.

*Instructor in French*

GEORGE F. ASHLEY

*Instructor in Drawing*

#### OTHER INSTRUCTORS

HEINZ KOLB, Ph.D.

*Assistant in Chemistry*

CARL C. TARBOX, A.B.

*Assistant in Oratory*

RICHARD B. COOLIDGE, A.M.

*Assistant in English*

SHERBURNE HILL

*Assistant in Physical Training*

MARTIN L. KIDDER

*Assistant in Mathematics, Bromfield-Pearson Department*

## STANDING COMMITTEES OF THE FACULTY

ADMISSIONS: Professor Denison, *Chairman*; the examiners, and the Secretary of the Faculty.

PROMOTIONS: Professor Shipman, *Chairman*; Professors Brown, Fay, Durkee, and Wade.

SCHOLARSHIPS AND AIDS: President Capen, *Chairman*; Professors Shipman and Brown.

PROGRAM: Professor Lewis, *Chairman*; Professor Anthony and Assistant Professor H. G. Chase.

CATALOGUE: Professor Maulsby, *Chairman*; Professor Anthony, and Dr. Williams (from the Medical School).

LIBRARY: Professor Shipman, *Chairman*; Professors Fay, Hooper, Knight, Metcalf, and Wade.

MEMBERS ON THE PART OF THE FACULTY OF THE ADVISORY COMMITTEE ON ATHLETICS: Professor Wren, *Chairman*; Dr. Stroud, and Professor Harmon (from the Divinity School).

STUDENT ORGANIZATIONS: Professor Lewis, *Chairman*; Professor Knight (from the Divinity School), Professors Denison and Evans, and Dr. Stroud.

FRESHMAN PLANS OF STUDY: Professor Lewis, *Chairman*; Professors Brown and Denison.

BOOKS AND SUPPLIES: Professor Lewis, *Chairman*; Professors Durkee, Anthony, and Wren.

INFORMATION: Professor Cushman, *Chairman*; Professors Denison and Wren.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman*; Professor Wren, and Dr. Stroud.

EXCUSES: Professor Shipman, *Chairman*; Professor Anthony, and Assistant Professor H. G. Chase.

EXAMINATIONS: Professor Metcalf, *Chairman*; Professors Anthony and Denison.

CURRICULUM: Professor Maulsby, *Chairman*; Professors Kingsley, Denison, Evans, and Mr. Ransom.



## Requirements for Admission

---

Candidates will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

Candidates for the degree of Bachelor of Arts or of Bachelor of Science, except in the Department of Engineering, must have received adequate preparation in certain required subjects, as follows\* :—

### The Primary Group

Elementary English;

An Elementary Foreign Language, ancient or modern;

Elementary History;

Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.
2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

---

\* For detailed statement of the requirements in the Primary Group, see pages 41 to 45.

The Secondary subjects and their assigned units are as follows\*:—

### The Secondary Group

#### ELEMENTARY

Greek, 4  
 Latin, 6  
 French, 4  
 German, 4  
 Chemistry, 1  
 Physics, 1  
 Botany, 1 or 2  
 Zoology, 1 or 2  
 Geology, 1 or 2  
 Physiology, 1 or 2

#### ADVANCED

English, 2  
 Greek, 2  
 Latin, 2  
 French, 2  
 German, 2  
 History, 2  
 Advanced Algebra, 1  
 Trigonometry, 1  
 Solid Geometry, 1  
 Chemistry, 2  
 Physics, 2

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

### Engineering: the Primary Group

Elementary English;  
 One Elementary Foreign Language;  
 Algebra;  
 Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:—

### Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 41 to 51.

\* For detailed statement of the requirements in the Secondary Group, see pages 45 to 51.

## The Primary Group

### I. Elementary English\*.

1. *Reading and Practice*.—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

1903, 1904, 1905,—Shakespeare's *Merchant of Venice* and *Julius Caesar*; the *Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Rime of the Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice*.—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

1903, 1904, 1905,—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

---

\* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

## II. One of the following Languages:

### I. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch, *Das Jahr 1813*; Schiller, *Der dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(b) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

### 2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings

of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(b) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

### 3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(a) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(b) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

### 4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(a) The translation at sight of passages of simple Attic prose.

(b) A thorough examination on Books I and II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple



Attic prose, involving the use of such words, constructions, and idioms only as occur in the prescribed portion of Xenophon.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's *Anabasis*, or an equivalent.

### III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

*While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.*

*This does not necessarily imply any increase in the time devoted to Greek and Roman history.*

3. The history of England, with due reference to social and political development. Larned's *History of England* and Montgomery's *Leading Facts of English History* will indicate the character of the work expected.

4. The history and government of the United States. Such texts as McLaughlin's *History of the American Nation*, Johnston's or Channing's *History of the United States*, and Fiske's *Civil Government* should be used.

*It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.*

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the textbook should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the

Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

#### IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(a) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(b) Plane Geometry, including the solution of simple original exercises and numerical problems.

### The Secondary Group

The subjects and their values in entrance units are as follows:—

#### I. Advanced English.

*Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.
2. Old English (Anglo-Saxon): chiefly simple prose and grammar.
3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

#### II. Elementary German.

*Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

#### III. Elementary French.

*Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

#### IV. Elementary Latin.

*Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

**V. Elementary Greek.***Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

**VI. Advanced German.***Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (a). At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

**VII. Advanced French.***Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of

classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

#### VIII. Advanced Latin.

*Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should include Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

#### IX. Advanced Greek.

*Two entrance units.*

The examination will be adapted to the proficiency of those

who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(a) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(b) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's *Anabasis*, or their equivalent in Attic prose, and six books in Homer's *Iliad*, or their equivalent in the *Odyssey*. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

#### **X. Advanced History.**

*Two entrance units.*

One of the following:—

1. The history of Greece and Rome, as described on page 44, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 44, for those only who have offered Greek and Roman History as primary subjects.

3. The history of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a year's detailed study of a limited period within that field.

Each of these subjects requires two years' study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

#### **XI. Advanced Mathematics.**

1. Plane Trigonometry, with its applications.

*One entrance unit.*



- |                      |                           |
|----------------------|---------------------------|
| 2. Solid Geometry.   | <i>One entrance unit.</i> |
| 3. Advanced Algebra. | <i>One entrance unit.</i> |

**XII. Physics.**

(a) **ELEMENTARY.** *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(b) **ADVANCED.** *Two entrance units.* In addition to (a), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Burgin's Text Book of Physics.

**XIII. Chemistry.**

(a) **ELEMENTARY.** *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory notebook.

(b) **ADVANCED.** *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book mentioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

**XIV. Natural History.**

*One or two entrance units.*

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five

periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Leconte, Scott, Tarr.

**XV. Freehand Drawing.**

*One entrance unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

**XVI. Mechanical Drawing.**

*One entrance unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in this respect. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in the subject only on examination.

**XVII. Shopwork.**

*One entrance unit.*

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced standing is given in this subject only on examination.

**GENERAL INFORMATION RELATING TO ADMISSION**

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 5 and 6.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations.

Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

**Admission by Certificate.**—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools that have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must state the time devoted to each subject offered for admission, the standing of the student according to the school record, and such facts in regard to the method and means of instruction as the department examiners may call for.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year, and any certificate from a school not on the approved list of the College should be accompanied by the necessary information in regard to courses and facilities of instruction, written upon the official blank of the College, in order to be considered by the Committee on Admission.

Blank forms for certificates, and for application from secondary schools, will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

☞ Beginning January 1, 1904, no certificate will be accepted from any school in New England which has not been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Boston University, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

## Requirements for Degrees

---

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Throughout the courses students have large liberty in choosing their work, but they are brought into personal advisory relations with the major instructors, who arrange and guide a considerable portion of it, after its general direction has been determined. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

### SYNOPSIS OF THE REQUIREMENTS FOR A.B.\*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

---

\* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.



(2) The program of prescribed studies is as follows:—

	TERM HOURS
LANGUAGES (Latin, Greek, French, German, Hebrew: each student to take <i>three</i> ) . . . . .	18
ENGLISH . . . . .	6
MATHEMATICS . . . . .	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology; each student to take <i>one or two</i> ) . . . . .	12
MENTAL AND MORAL SCIENCE* (each student to take <i>three</i> ) . . . . .	12
PHYSICAL TRAINING . . . . .	2
A total of . . . . .	56

The requirements are by groups, not by special subjects, and in each group except Mathematics and English some choice is allowed the student.

The program of the student in the first year will be made up from the prescribed groups, except by special permission of the Faculty.

(3) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work. The major department and the plan of work for the first half-year must be reported by the student, in the proper form, upon registration on the opening day of the College year.

(4) Acting under the advice of the instructor in his major department, the student will make up a program of eighteen term hours in collateral subjects; that is, subjects tending to strengthen and assist his work in his major. The student's major instructor is to be his official adviser on general matters relating to his college course.

\* Of the five subjects, Logic, the History of Philosophy, Economics, History, and Public Law, the student must take at least three—three term hours of each. The remaining three term hours may be chosen from the two other subjects or from the advanced work in the three subjects at first selected.

(5) The remaining thirty-six term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects.

(6) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

### Summary

	TERM HOURS
Prescribed work . . . . .	56
Major department . . . . .	18
Collateral subjects . . . . .	18
Elective * . . . . .	36
	<hr/> 128

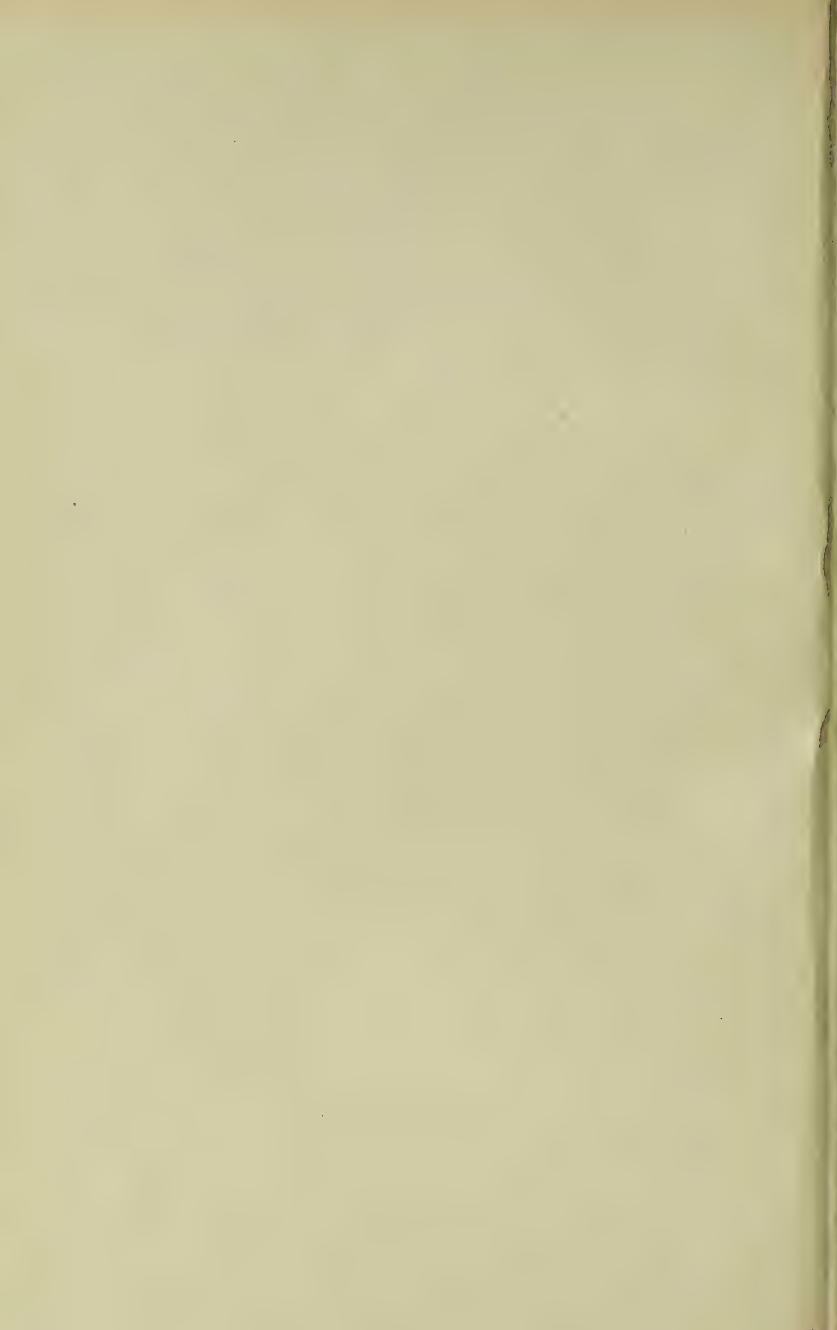
### For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

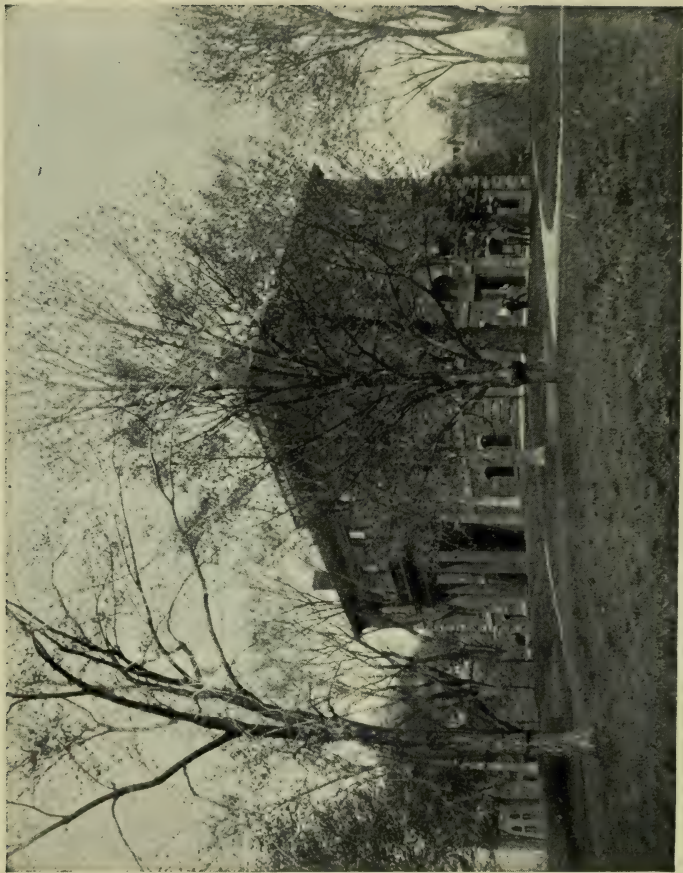
The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

---

\* An acceptable Commencement part counts as an elective in the second half of the Senior year.



THE  
JOHN CRERAR  
LIBRARY.



BALLOU HALL



# Departments of Instruction

---

## MAJOR DEPARTMENTS

Any of the following may be chosen as major departments :

ENGLISH	ECONOMICS AND
GERMAN	SOCIOLOGY
FRENCH	MATHEMATICS
LATIN	PHYSICS
GREEK	CHEMISTRY
PHILOSOPHY	BIOLOGY
HISTORY AND	ENGINEERING
PUBLIC LAW	

---

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. Subjects count in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by figures in parenthesis following the proposed hour: thus (1) means "first half-year," (2) means "second half-year."

Subjects marked with an asterisk (\*) will not be counted for honors. Subjects marked with a double asterisk (\*\*) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours follows the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

### ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND ASSISTANT  
PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. In the advanced classes the seminary method is employed. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

### SUBJECTS

\*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45.* (1)

PROFESSOR MAULSBY AND MR. COOLIDGE.

\*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45.* (2)

ASSISTANT PROFESSOR WHITTEMORE AND MR. COOLIDGE.

\*8. The Theory and Practice of Composition. Text-book, themes, conferences. PROFESSOR MAULSBY.

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

\*3. Daily Composition. *Tu., 3.00. (1) Counting as two hours.*

PROFESSOR SHIPMAN.

\*4. The Principles of Expository Writing are discussed, and specimens from eminent authors are studied. The written work consists of two themes each week. *Tu., 3.00. (2) Counting as two hours.*

PROFESSOR SHIPMAN.

\*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week. *Th., 3.00. (1) Counting as two hours.*

PROFESSOR SHIPMAN.

\*6. Essays, with special attention to the construction of extended discourse. Weekly papers, plans, free discussion, individual criticism. *Th., 3.00. (2) Counting as two hours.*

PROFESSOR SHIPMAN.

English 3, 4, 5, and 6 are open to students who have attained at least Grade C in English 1 and 2.

7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45. (2)*

PROFESSOR MAULSBY.

9. English Lyrics of the Sixteenth and Seventeenth Centuries. *Mon., Wed., Fri., 11.45. (2)*

ASSISTANT PROFESSOR WHITTEMORE.

10. The English Bible. *Tu., Th., Sat., 10.45. (1)*

ASSISTANT PROFESSOR WHITTEMORE.

\*11. General View of English Literature. Lectures, papers, examinations, and required reading. *Mon., Fri., 2.00.*

PROFESSOR MAULSBY, ASSISTANT PROFESSOR WHITTEMORE, PROFESSOR WADE, AND PROFESSOR KNIGHT.

English 11 is designed as an introduction to the study of special periods.

[\*\*12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.*

PROFESSOR MAULSBY.]

[13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45. (1)*

ASSISTANT PROFESSOR WHITTEMORE.]

English 13 will be given in 1903-1904.

[14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Tu., Th., Sat., 8.45.* (2)

PROFESSOR MAULSBY.]

English 14 will be given in 1903-1904.

[15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* ASSISTANT PROFESSOR WHITTEMORE.]

17. Shakespeare. Reading of selected plays, lectures, examinations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR MAULSBY.

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (2)

ASSISTANT PROFESSOR WHITTEMORE.

English 17 should precede English 18.

[19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems, examinations. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 19 may be dropped at the end of the first half-year.

\*\*20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, Beowulf will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and Composition. *First half-year. Counting as three hours.* ASSISTANT PROFESSOR WHITTEMORE.

24. History of English Criticism. Discussion, examinations, essays. *Tu., Th., Sat., 11.45.* (2) PROFESSOR SHIPMAN.

[25. Development of the Drama. *Mon., Wed., Fri., 9.45.*

PROFESSOR MAULSBY.]

26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon-preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

## ORATORY

## ASSISTANT PROFESSOR WHITTEMORE

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for specializing, during two successive years, either in dramatic reading or in senatorial oratory. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

## SUBJECTS

1. The Principles of Oratory Exemplified in Practice. *Th.*, 2.00.

ASSISTANT PROFESSOR WHITTEMORE.

2. Individual Presentation of Standard Poetry and Prose. *Wed.*, 11.45.

ASSISTANT PROFESSOR WHITTEMORE AND MR. TARBOX.

4. Dramatic Rendering. Study and delivery of scenes from the standard drama. The possible public presentation of a play. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

6. The Preparation and Delivery of Original Speeches. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th.*, 2.00. (2)

PROFESSOR MAULSBY.

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

8. Extemporaneous Speaking. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

Oratory 8 is open to those who have taken Oratory 6.



## GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

## SUBJECTS

\*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Mon., Wed., Fri., 9-45.* MR. COLWELL.

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

\*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such

works as Baumbach, *Der Schwiegersohn*; Gerstäcker, *Irrfahrten*; Seume, *Mein Leben*; Ebner Eschenbach, *Die Freiherren von Gempferlein*. *Mon., Wed., Fri., 8.45.* MR COLWELL.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

\*\*3. First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, *Minna von Barnhelm*; Schiller, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*. *Tu., Th., Sat., 8.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

\*\*3B. German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. *Tu., Th., 8.45.*

MR. COLWELL.

German 3B is offered to students who have satisfactorily completed German 2, or its equivalent.

4. Schiller and Goethe. *Maria Stuart*; *Wallenstein*; *Egmont*; Robertson's *Correspondence between Goethe and Schiller*; lyrics; collateral reading in historical prose. *Tu., Th., Sat., 11.45.* MR. COLWELL.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. *Nathan der Weise*, *Emilia Galotti*, *Laocoon*; Tasso, *Iphigenie*, *Faust*, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, *Mittelhochdeutsches Lesebuch*. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY.

## FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement

of which the student is referred. Six consecutive subjects are offered.

#### SUBJECTS

\*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.*

PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

\*2. Intermediate French. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's *Colomba* and Sandeau's *Mademoiselle de la Seiglière*. *Mon., Wed., Fri., 8.45.*

PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language.

\*\*3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.*

PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century. Crane's *Société Française au XVII<sup>e</sup> Siècle*; Molière, *Les Précieuses Ridicules*, *Les Femmes Savantes*; Boileau, *Les Héros de Roman*; Madame de Sévigné; Madame de la Fayette; Rostand, *Cyrano de Bergerac*; collateral reading from modern critics. *Mon., Wed., Fri., 2.00.*

PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri., 3.00.*

PROFESSOR LEWIS.

Either half-year may count as a half-subject.

[6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Demogeot and Brunière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Tu., Th., Sat., 10.45.* PROFESSOR FAY.]

### ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature.

#### SUBJECT

1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, *Divina Commedia* (Scartazzini's edition). *Tu., Th., Sat., 10.45.* PROFESSOR FAY.

### LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two or more composition courses are offered every

year, and a number of other subjects, such as Latin 8 and 9, will be given, with due announcement, at intervals of two or more years. Courses 3, 4, 7, and all designated by numbers above 7, are suitable for graduate students. Such students will, however, be expected to do an extra amount of work in these subjects, and may be required to prepare theses, or make other special investigations.

#### SUBJECTS

\*1. Cicero, *De Senectute*, or *De Amicitia*; Vergil, *Eclogues*; Selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division a, 8.45; Division b, 9.45.* PROFESSOR DENISON.

Latin 1 is introductory to all later subjects. Latin 5 is designed especially for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, *Cena Trimalchionis*; Horace, *Odes* and *Epodes*; Tacitus, *Germania* or *Agricola*; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.*

PROFESSOR DENISON.

Latin 2 is open to students who have completed Latin 1.

3. Juvenal, principal *Satires*; Martial, selected *Epigrams*; Suetonius, *Life of Augustus*; Tacitus, selections from the *Annals*; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. They will touch at many points the work of Latin 9. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.

[4. Horace, *Satires* and *Epistles*; Plautus, two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

\*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu., 2.00.* PROFESSOR DENISON.

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention will be paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th., 2.00.* PROFESSOR DENISON.



7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.*

PROFESSOR DENISON.

[8. Catullus and the Elegiac Poets. *Mon., Wed., Fri., 4.00. (1) or (2)*

PROFESSOR DENISON.]

9. The Private Life of the Romans. Lectures and collateral reading. Short investigations by the students. Latin 9 is open to those who have completed Latin 1, if taken as supplementary to other work in Latin. There will be full illustration with the stereopticon. *Mon., Wed., Fri., 4.00.*

(1)

PROFESSOR DENISON.

The work of Latin 9 will have close relation to much of the reading of Latin 3.

10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. These authors will be studied from a literary point of view. Latin 10 is open to students who have completed Latin 1. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR DENISON.

### GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

#### SUBJECTS

\*1. Elementary. Forman's First Greek Book; Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily, 9.45.*

PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**\*\*2.** Xenophon, or Plato; Herodotus; Homer, the Odyssey; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek. The works read in Greek 2 are chosen primarily to help the student to a mastery of the language, and to give those who can carry the study of Greek no further some knowledge of the branches of Greek literature treated. The literary characteristics of the authors read will be dwelt upon, and lectures on suitable topics will be given.

3. Lysias, selected Orations; Antiphon, Herodes and Choreautes; Demosthenes, On the Crown; Euripides, Bacchantes; Aeschylus, Seven against Thebes; reading at sight. *Tu., Th., Sat., 11.45.*

PROFESSOR WADE.

The works read in Greek 3 vary from year to year. The aim of this subject is to present systematically the dramatic and forensic literature of classical Greece. The reading is accompanied by lectures.

4. Theocritus, Idylls and Epigrams; Pindar, Olympian and Pythian Odes; Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tu., Th., Sat., 8.45.*

PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

**\*\*6.** Greek Composition; practice in sight reading. *Tu., 4.00.*

PROFESSOR WADE.

Greek 6 may be taken by anyone who has had the equivalent of Greek 1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition ; reading at sight ; outside study of some Greek author, including the preparation of an essay. *Th., 4.00.*

PROFESSOR WADE.

Greek 7 is intended primarily for Sophomores making Greek their major. Other students properly qualified will be admitted.

8. Advanced Subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. A reading knowledge of French and German is necessary. The preparation of a thesis is required. Properly qualified undergraduates may be admitted.

PROFESSOR WADE.

### CLASSICAL ARCHAEOLOGY

The fields of Greek and Roman Archaeology and Art are so intimately connected that they cannot adequately be treated separately. The following related subjects are therefore offered with a view to presenting a reasonably complete survey of ancient architecture, painting, and sculpture.

#### SUBJECTS

[1. Greek, Roman, and Etruscan Architecture ; Ancient Painting.  
*Mon., Wed., Fri., 4.00. (1)* PROFESSOR DENISON.]

[2. Greek and Roman Sculpture. *Mon., Wed., Fri., 4.00. (2)*  
PROFESSOR WADE.]

The work in both subjects will consist of lectures, collateral reading, and papers. There will be full illustration with photographs, stereopticon, and specimens.

### HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

#### SUBJECTS

1. The elements of grammar ; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Three hours a week.*

PROFESSOR WOODBRIDGE.

2. Syntax ; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE.

## PHILOSOPHY\*

PROFESSOR CUSHMAN

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic is open to him. If he wishes to take any of the other subjects in the department, he must begin with the history of philosophy. In all cases where there is opportunity the department advises the student to begin with the history of philosophy, which is its primer. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

## INTRODUCTORY SUBJECTS

[1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism,

---

\* The departments of Philosophy, History and Public Law, and Economics and Sociology constitute the group of Mental and Moral Science, in which twelve term hours of work are required for A.B. See page 54.

neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45. (1)*

PROFESSOR CUSHMAN.]

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.*

(1) PROFESSOR CUSHMAN.

Philosophy 1 and 2 are given at the same hour on alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45. (1)*

PROFESSOR SHIPMAN.

#### ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45. (2)*

PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

\*\*5. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45. (2)*

PROFESSOR CUSHMAN.

Philosophy 5 regularly follows Philosophy 1 or 2.

6. Ethics and Literary Criticism: the Theory of Morals considered constructively, and with special reference to literary criticism. The first part of Philosophy 6 is devoted to a discussion of the principal problems in ethics, with a review of the leading historical theories, to the end of an independent construction on the part of the student. In the last part of the course, to further this end and to help students of literature in criticism, the class will apply and test such constructed theory by criticising characters found in literature. The course is especially arranged for such students. Lectures, text-book. *Mon., Wed., Fri., 10.45.*

PROFESSOR CUSHMAN.

[7. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.*

PROFESSOR CUSHMAN.]

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-con-



sciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

Subjects 6 and 7 are given at the same hour in alternate years.

[8. Aesthetics: the theory of Beauty, with illustrations from the fine arts; historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45.* (1) PROFESSOR CUSHMAN.]

9. Ethics, practical: contemporary problems, education, charities, temperance, socialism. *Tu., Th., Sat., 10.45.* (2) PROFESSOR TOUSEY.

Philosophy 9 must be preceded by Philosophy 6.

10. The Philosophy of Religion: classification of theological questions, with critical and constructive work by the class; lectures; wide reading. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR KNIGHT.

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45.* (2) PROFESSOR CUSHMAN.]

Philosophy 11 will be given in 1904-1905.

12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45.* (2)

PROFESSOR CUSHMAN.

[13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45.* (2).

PROFESSOR CUSHMAN.]

Philosophy 13 will be given in 1903-1904.

14. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.*

PROFESSOR TOUSEY.

## PEDAGOGICS

### SUBJECT

[1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45.* (2)

PROFESSOR CUSHMAN, ASSISTED BY TEACHERS  
FROM LEADING SECONDARY SCHOOLS.]

**HISTORY AND PUBLIC LAW\***

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 9 offer to properly qualified students opportunity to make a more detailed study of limited periods in the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 10, 11, 11A, and 11B deal with Jewish and ecclesiastical history, and the comparative history of religions. History 12 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects, dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A

---

\* See note, page 70.

knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

## History

### SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes. *Mon., Wed., Fri., 10.45.* PROFESSOR EVANS AND MR. WOOD.

History 1 must precede all other subjects in History, except History 2, which it may either precede or accompany. History 1 and 2 are not open to Freshmen, and will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES.

3. American History from 1750 to the Civil War. Text-book, lectures, and themes. *Mon., Wed., Fri., 10.45.* PROFESSOR BOLLES.

[4. Constitutional History of England. A study of the growth of the constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.]

[5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the Thirty Years' War, the rise of Russia, the rule of Richelieu and Mazarin, the age of Louis XIV, the creation of Prussia and the Ancient Régime. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.]

History 4 and 5 will not be given in 1902-1903, but may be expected in 1903-1904.

6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.

7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.

History 6 and 7 will not be given in 1903-1904.

[8. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tu., Th., 3.00.* (1)  
PROFESSOR BOLLES.]

[9. English Social Life. Lectures and illustrations. *Tu., Th., 3.00.* (2)  
PROFESSOR BOLLES.]

10. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.*  
(1) PROFESSOR KNIGHT.

11. Ecclesiastical History,—History of the Church, of the Sects, and of Doctrines, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45, and a fourth hour, to be arranged.*  
PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

11A. History of the Jews before Christ. A study of the political relations, institutions, and other literature of the Jewish people. *Mon., Wed., Fri., 4.00.*  
PROFESSOR HARMON.

11B. History of the Beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 9.45.* (1)  
PROFESSOR HARMON.

12. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1902-1903 the subject of study will be the constitutional history of the Civil War. History 12 is open only to such students, making History their major subject, as receive the special permission of the instructor. Full subject, counting as six term hours; weekly meetings of two hours each. PROFESSOR EVANS.

## Public Law and Administration

### SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, *The American Commonwealth*, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (1)  
PROFESSOR EVANS.

Public Law 1 must be preceded by History 1, and must precede all other courses in this group, except Public Law 3. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1, 2, and 3 in their third year.

2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR EVANS.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tu., Th., Sat., 9.45.* (1) PRESIDENT CAPEN.

Public Law 3 must be preceded by History 1.

4. European Government and Politics. A study of the constitutions of the chief European States, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.

5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (2) PROFESSOR EVANS.

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.]

[7. Elements of Jurisprudence. A study of the leading juristic principles, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 8.45.* (2) PROFESSOR EVANS.]

## ECONOMICS AND SOCIOLOGY\*

PRESIDENT CAPEN AND PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Economics and Sociology is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with public charities.

To these ends instruction is offered at present in seven different subjects. Economics 1 is designed to lay the foundation

\* See note, page 70.



for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics should enter upon the work in the second year of their college course. A knowledge of general, constitutional, and political history is useful. The character of the work in the advanced courses is briefly outlined in connection with the following statement of subjects.

## SUBJECTS

1. Elements of Economics. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on trade unions, co-operation, socialism, and finance. Bullock's Introduction to the Study of Economics is used as a guide. *Tu., Th., Sat., 10.45.*

PROFESSOR METCALF.

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the industrial revolution and the rise of the factory system; growth of foreign trade; the tendency toward industrial centralization; speculation and commercial crises. Lectures, collateral reading, and reports. *Mon., Wed., Fri., 9.45. (1)*

PROFESSOR METCALF.

3. Practical Sociology. The nature and methods of social science. Economics 3 is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Mon., Wed., Fri., 9.45. (2)*

PROFESSOR METCALF.

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. Adams's Public Finance is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45. (1)*

PROFESSOR METCALF.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. *Tu., Th., Sat., 8.45. (2)*

PROFESSOR METCALF.

6. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 6 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR METCALF.

7. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructors.*

PRESIDENT CAPEN AND PROFESSOR METCALF.

## MATHEMATICS

PROFESSOR BROWN AND PROFESSOR WREN

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

The first subject constitutes the required work in mathematics, and should be taken in the Freshman year. Students intending to pursue work in mathematics beyond the first year should take in order subjects 1, 3, 6, 7, and 8, which open the way to all others, and constitute the main framework of their studies. More comprehensive knowledge of algebra, trigonometry, and analytics than is required for entering upon subsequent branches may be obtained by electing subjects 2, 4, and 5, respectively. Juniors and Seniors who have mastered the calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

### SUBJECTS

1. College Algebra; Solid Geometry; Plane Trigonometry; Applications of Plane Trigonometry. *Tu., Th., Sat.: Division a, 8.45; Division b, 9.45.*

MR. RANSOM.

2. Advanced Algebra. Theory of Equations and Elements of Determinants. *Tu., Th., Sat., 11.45. (2)*

PROFESSOR BROWN.

3. Plane Analytic Geometry. *Tu., Th., Sat., 9.45. (1)*  
PROFESSOR BROWN.
4. Advanced Trigonometry. *Tu., Th., Sat., 11.45. (1)* MR. RANSOM.
5. Higher Plane Curves; Analytic Geometry of Three Dimensions.  
*Tu., Th., Sat., 9.45. (2)* PROFESSOR BROWN.
6. Differential and Integral Calculus. *Mon., Wed., Fri., 11.45. (2)*  
PROFESSOR BROWN.
7. Differential and Integral Calculus (continued). *Mon., Wed., Fri., 11.45. (1)*  
PROFESSOR BROWN.
8. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45. (2)*  
PROFESSOR BROWN.
9. Determinants. *Mon., Wed., Fri., 3.00. (1)* MR. RANSOM.
10. Differential Equations. *Two hours for the second half-year.*  
PROFESSOR WREN.
11. Method of Least Squares. *Three hours for the second half-year.*  
PROFESSOR WREN.
12. Quaternions. *Three hours for the first half-year.*  
PROFESSOR WREN.
13. The Theory of the Potential Function. *Three hours for the second half-year.*  
PROFESSOR WREN.
14. Topics from the History of Mathematics. *Wed., 3.00. (2)*  
MR. RANSOM.

## PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book in used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

An elective course is offered of about twenty-five lectures upon the relations of physics to other branches of natural science, introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in physics. Spencer's *First Principles* is read, and its subject-matter thoroughly discussed.

In the physical laboratory, beginners are given Stewart and Gee's *Practical Physics*, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satisfactory results are obtained. Glazebrook and Shaw's *Practical Physics* is followed on the subjects of sound, heat, and light, Pickering's *Manipulation* and Kohlrausch's *Measurements* being also used to a limited extent. In electricity and magnetism, Stewart and Gee's second volume is mainly followed, supplemented, in the case of engineering students, by parts of Gray's *Absolute Measurements* and Kempe's *Testing*. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

#### SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing Physics for their prescribed science subject, and is introductory to other subjects in Physics. *Mon., Wed., Fri., 10.45.*

PROFESSOR DOLBEAR.

2. Electricity. Thompson's *Elementary Lessons in Electricity and Magnetism*. Lectures and recitations. *Mon., Wed., Fri., 11.45. (2)*

ASSISTANT PROFESSOR H. G. CHASE.

3. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Tu., Th., 2.00 to 5.00. (2) Counting as three term hours.*

ASSISTANT PROFESSOR H. G. CHASE.

4. Electricity: Theory of Measurements. *Mon., Wed., Fri., 11.45. (1)*

ASSISTANT PROFESSOR H. G. CHASE.

5. Electrical Laboratory: Simple Measurements and Tests. *Counting*

*as five term hours. Tu., Th., 9.45 to 12.45; Fri., 9.45 to 11.45; also, for the first half-year, lecture, Wed., 9.45.*

ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

6. Relation of Physics to Sociology. Lectures. *Tu., Th., 4.00. (1)*  
PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tu., Th., 4.00. (2)*  
PROFESSOR DOLBEAR.

[8. Telephone and Telegraph. *Tu., Th., 9.45. (2)*  
PROFESSOR DOLBEAR.]

## ASTRONOMY

### SUBJECT

1. Recitations and lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tu., Th., 3.00. (1)*  
PROFESSOR DOLBEAR.

## CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.



The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The courses of lectures on metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of organic chemistry begins with a course of lectures, illustrated by experiments and recitations, which cover the general principles and methods, and include description of the most important organic compounds. For those who wish to specialize in this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the

student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special course in chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Special Course in Chemistry.

#### SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work. Counting as six term hours.*

PROFESSOR DURKEE AND DR. GARNER.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45. (1) Counting as three term hours.*

PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45. (2) Counting as three term hours.*

PROFESSOR DURKEE.

4. Qualitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

5. Qualitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

[6. Mineralogy 1 is equivalent to Chemistry 6.]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00. (2) Counting as two term hours.*

DR. KOLB.

8. Metallurgy. Lectures and recitations. Chemistry 8 is open to students who have taken Chemistry 1. *Wed. Fri., 10.45. (2)*

PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour. (1)* PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45. (1) Counting as three term hours.* DR. GARNER.

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45. (2) Counting as two term hours.* DR. GARNER.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Tu., Th., Sat., 11.45. (1) Counting as three term hours.* PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. *(2) and (1) Counting as six term hours.* PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors. Counting as two term hours.*

PROFESSOR MICHAEL AND DR. KOLB.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.*

PROFESSOR MICHAEL AND DR. KOLB.

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.*

PROFESSOR MICHAEL.

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.*

PROFESSOR MICHAEL.

## BIOLOGY

PROFESSOR KINGSLEY AND DR. LAMBERT

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes,

reagents, as well as abundant material for illustration and dissection. There is also a department library containing about 1,600 volumes and over 4,500 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

## SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th. : lecture, 11.45 ; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 1 is required of all who elect work in this department, and is a pre-requisite for the other biological courses.

[2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri. : lecture, 4.00 ; laboratory, 2.00 to 4.00. Counting as six term hours.* PROFESSOR KINGSLEY.]

3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri. : lecture, 4.00 ; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45 ; laboratory, Tu., Th., 2.00 to 4.00. (2) Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45 ; laboratory, Mon., Fri., 2.00 to 4.00. (1) Counting as three term hours.*

PROFESSOR KINGSLEY.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri. : lecture, 11.45 ; laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*

DR. LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

## GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. The expense of these excursions will be within two dollars for each student.

### SUBJECTS

1. Physiography. Lectures and recitations, field work, written reports. *Tu., Th., 2.00; occasionally Sat. afternoon.* (2) *Counting as three term hours.* MR. RICHARDS.

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45.* *Counting as six term hours.* MR. RICHARDS.

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours.* PROFESSOR KINGSLEY AND MR. RICHARDS.

4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year.* *Counting as three term hours.* MR. RICHARDS.



**MINERALOGY**

1. Determinative Mineralogy. Laboratory work, six hours a week; open to students who have taken Chemistry 1, 2, and 3. *Tu., Th., Sat., 10.45 to 12.45.* (1) *Counting as three term hours.* MR. RICHARDS,

2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45 to 12.45.* (2) *Counting as three term hours.* MR. RICHARDS.

**DRAWING AND SHOPWORK**

PROFESSOR ANTHONY

**Drawing**

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course

in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

#### SUBJECTS

[For hours, see the Engineering program.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week (second half-year).*

PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour† a week (second half-year).*

PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours\* a week for the year.*

PROFESSOR ANTHONY AND MR. ASHLEY.

4. Kinematics. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

5. Machine Drawing (elementary). *Two hours† a week (second half-year).*

PROFESSOR ANTHONY.

6. Machine Drawing (advanced). *Two hours\* a week (first half-year).*

ASSISTANT PROFESSOR C. H. CHASE.

7. Elements of Design. *One hour\* a week (second half-year).*

PROFESSOR ANTHONY.

8. Machine Design (advanced). *Two hours\* a week (first half-year).*

PROFESSOR ANTHONY.

#### SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

\* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

## SUBJECTS

[For hours, see the Engineering program.]

1. Carpentry, Turning, and Moulding. *Two hours\* a week (first half-year).* MR. STEWART.
2. Pattern-making. *One hour\* a week (second half-year).* MR. STEWART.
3. Forging. *One hour\* a week (second half-year).* MR. STEWART.
4. Vise and Machine Tools. *Two hours\* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.
5. Project Work. *Three hours\* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

## CIVIL AND MECHANICAL ENGINEERING

PROFESSORS BRAY AND SANBORN

There are offered in the department of Civil and Mechanical Engineering such selected subjects from the engineering courses as may be profitably pursued by students in the courses in Liberal Arts who have taken the necessary preliminary work in mathematics, and who may desire to shape their work with reference to pursuing study in engineering after graduation. Such students will also find subjects adapted to their plans in the departments of Mathematics, Physics, Chemistry, and Drawing. Fuller details of the work in engineering will be found in the statement of the engineering courses. For all the subjects given below, algebra, geometry, and trigonometry are an indispensable preparation.

In the statement below, each "hour" is the equivalent of one term hour of credit.

## SUBJECTS

[For hours, see the Engineering program.]

1. Surveying. General field practice, computations, and plotting. *Two hours\* a week (first half-year); two hours\* a week (second half-year).* PROFESSOR SANBORN AND MR. ROCKWELL.
2. Topography and Advanced Surveying. Lectures, recitations, drawing, and field practice. *Two hours\* a week.* PROFESSOR SANBORN.
3. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours\* a week (first half-year).* PROFESSOR BRAY.

---

\* See foot-note, page 88.

4. Railroads. Economic Locations (to be taken with Engineering 3).  
*Three hours a week.* PROFESSOR BRAY.
5. Hydraulics. *Three hours a week (second half-year).*  
PROFESSOR SANBORN.
6. Pure Mechanics. *Three hours a week (first half-year).*  
PROFESSOR SANBORN.
7. Applied Mechanics. *Three hours a week (second half-year).*  
PROFESSOR BRAY.
8. Experimental Mechanics (laboratory). *One hour\* a week (first half-year).*  
PROFESSOR SANBORN.
9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*  
ASSISTANT PROFESSOR C. H. CHASE.
10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).*  
PROFESSOR BRAY.
11. Highways. *Two hours a week (second half-year).*  
PROFESSOR SANBORN.
- [12. Masonry Construction. *Three hours a week (second half-year).*  
PROFESSOR BRAY.]
- [13. Sanitary Engineering. *Three hours a week (second half-year).*  
PROFESSOR SANBORN.]
14. Roofs and Bridges. *Three hours a week (first half-year).*  
PROFESSOR BRAY.
15. Structural Design. *Two hours a week.* MR. ROCKWELL.

## ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Liberal Arts who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 4 and 5 require a like acquaintance with calculus and differential equations.

### SUBJECTS

[For hours, see the Engineering program.]

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).* PROFESSOR HOOPER.

\* See foot-note, page 88.

2. Electrical Problems. *Two hours a week (second half-year).*

MR. ROLLINS.

3. Electrical Laboratory (advanced course). *Three hours a week for the year.*

PROFESSOR HOOPER.

4. Electricity: Alternating Currents. *Three hours a week for the year.*

PROFESSOR HOOPER.

5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).*

PROFESSOR HOOPER.

6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).*

PROFESSOR HOOPER.

7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).*

PROFESSOR HOOPER.

8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).*

PROFESSOR HOOPER.

## MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

### SUBJECTS

- [1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., 4.00.*

PROFESSOR LEWIS.]

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2. Music 1 will be given in 1903-1904.

2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading concerning the lives of Bach, Mozart, and Beethoven. *Tu., 3.00-4.00; Th., 3.00-5.00.*

PROFESSOR LEWIS.

An elementary knowledge of piano playing is required.

- [3. Sight-reading in Song, and Harmonic Analysis. *Th., 4.00.*

PROFESSOR LEWIS.]

Music 3 will be given in 1903-1904.



Only those who have finished Music 2 may take Music 3. Work of the prominent composers of choral works in the eighteenth and nineteenth centuries will furnish the material for study in sight-reading. The harmonic analysis begun in Music 2 will be continued, with special attention to the more difficult problems of modern music.

4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Jadassohn, Bridge, and others; collateral reading concerning the lives of Schubert, Schumann, Mendelssohn, and Wagner. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.]

Students who elect Music 5 must have attained Grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

[6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45. (2)* PROFESSOR LEWIS.]

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read with facility German and French, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00. (2)* PROFESSOR DOLBEAR.]

The first half-year's work in Physics 1 must have been done by those who elect Music 8. Music 8 will not be given until 1904-1905.

## THE FINE ARTS

ASSISTANT PROFESSOR WHITEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9.45.*

ASSISTANT PROFESSOR WHITEMORE.

[2. The Fine Arts of the Middle Ages and the Renaissance. *Mon., Wed., Fri., 9.45.*

ASSISTANT PROFESSOR WHITEMORE.]

## PHYSICAL TRAINING

DR. STROUD AND MISS CARVILL

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumbbells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

## TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

The prefixed w signifies whole year; F, first half-year; S, second half-year

M Tu W Th F S indicate days for two-period and one-period subjects

## MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
CAPEN				
SCHNEIDER				
BOLLES	wHst 2		wHst 3	
BROWN		sMth 8		sMth 6, F7
SHIPMAN				
DOLBEAR			wPhs 1	
FAY	wGer 6		wGer 5	
KINGSLEY				FBio 5 M lect
MICHAEL				
CUSHMAN		FPhil 8, s11, 12, 13	wPhil 6, 7	
MAULSBY	FEng 17	wEng 25, 26	wEng 19, 20	
LEWIS	wFm 2	wFm 1		sMus 6
DURKEE			sChm 8 WF	
DENISON				wLat 3, 4
H. G. CHASE		wPhs 5 F FPhs 5 W lect	wPhs 5 F	sPhs 2, F4
WADE		wGrk 1		
METCALF	FECS 180	FECS 2, S3		
WHITTEMORE	sEng 18	wFnA 1, 2		sEng 9, w15
LAMBERT		wBio 7 WF	wBio 7 WF	wBio 7 WF lect
COLWELL	wGer 2	wGer 1		
EVANS	FPbL 4, 6, S5, 7		wHst 1	FPbL 1, S2
GARNER		FChm 10		sChm 11 MW
RANSOM				
KOLB				
RICHARDS			wGeo 2	wGeo 2
MEMBERS OF OTHER FACULTIES		wHeb 1		wPhil 14

## TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

Subjects in Roman type occupy three periods

Subjects in *Italic* type occupy two periods ; in **Boldface** type, one period

## MONDAY, WEDNESDAY, FRIDAY

	2.00	3.00	4.00	5.00
CAPEN				Hours in this column are subject to re-assignment during the opening week
SCHNEIDER				
BOLLES				
BROWN				
SHIPMAN				Assignments for 1902-3 will be found under the statements of the respective departments
DOLBEAR			sMus 8 M	
FAY	wFrn 4			
KINGSLEY	wBio 2, 3 MF fBio 5, s6 MF	wBio 2, 3 MF fBio 5, s6 MF	wBio 2, 3 MF lec sScGer W	
MICHAEL				Chm 12, 13, 14 15, 16, 17
CUSHMAN				
MAULSBY	wEng 11 MF wEng 12			
LEWIS		wFrn 5		wMus 7
DURKEE	wChm 4, 5 MF wChm 1 WF lect fChm 9 M	wChm 4, 5 MF fChm 9 M	wChm 4, 5 MF fChm 9 M	sChm 65
DENISON		wLat 2	fCla 1, Lat 9, s10 F or s Lat 8, 11, 12	
H. G. CHASE				
WADE	wGrk 2		sCla 2	
METCALF			sEcS 6	wEcS 7
WHITTEMORE				fEng 23
LAMBERT	wBio 7 WF	wBio 7 WF		
COLWELL				wGer 4
EVANS		fHst 4, 6, s5, 7		wHst 12
GARNER	wChm 1 M	wChm 1 M	wChm 1 M	
RANSOM		fMth 9 sMth 14 W		
KOLB				
RICHARDS	fGeo 130 W	fGeo 130 W	fGeo 130 W	fGeo 130 W
MEMBERS OF OTHER FACULTIES			wHst 11 a	Mth 10, 11, 12, 13

## TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

The prefixed w signifies whole year; F, first half-year; S, second half-year

M Tu W Th F S indicate days for two-period and one-period subjects

## TUESDAY, THURSDAY, SATURDAY

	8.45	9.45	10.45	11.45
CAPEN		F PbL 3		
SCHNEIDER	wGrk 4	wGrk 5		
BOLLES				
BROWN		F Mth 3, S5		S Mth 2
SHIPMAN			F Phil 3, S4	S Eng 24
DOLBEAR		S Phs 8 Tu Th		
FAY	wGer 3		wItal 1 wFrn 6	
KINGSLEY	F or SBio 4 lect			F Bio 1 TuTh lect
MICHAEL				
CUSHMAN		F Phil 1, 2, S5		S Ped 1
MAULSEY	S Eng 14		F Eng 1, S7	
LEWIS	wFrn 3			wMus 4, 5
DURKEE	wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu
DENISON	wLat 1a	wLat 1b		
H. G. CHASE		F Phs 5 Tu Th	wPhs 5 Tu Th	wPhs 5 Tu Th
WADE		wGrk 1		wGrk 3
METCALF	F EcS 4, S5		wEcS 1	
WHITTEMORE	F Eng 13		F Eng 10, S2	
LAMBERT				S Bio 1 TuTh lect
COLWELL				
EVANS				
GARNER		wChm 1 Tu	wChm 1 Tu	wChm 1 Tu
RANSOM	wMth 1a	wMth 1b		F Mth 4
KOLB				
RICHARDS		F Geo 130 S	F Min 1, S2	F Min 1, S2
MEMBERS OF OTHER FACULTIES	F Hst 10	wHst 11	S Phil 9	wEng 27 wPhil 10* F Hst 11 b*

\* These hours are for 1903-4.



## TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

Subjects in Roman type occupy three periods

Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

## TUESDAY, THURSDAY

	2.00	3.00	4.00	5.00
CAPEN				Hours in this column are subject to re-assignment during the opening week
SCHNEIDER				
BOLLES		<i>FHst 8, 89</i>		
BROWN				
SHIPMAN		<i>FEng 3 Tu, 5 Th</i> <i>sEng 4 Tu, 6 Th</i>		Assignments for 1902-3 will be found under the statements of the respective departments
DOLBEAR		<i>FAsst 1</i>	<i>FPhs 6, 87</i>	
FAY				
KINGSLEY	<i>FBio 1</i> <i>F or sBio 4</i>	<i>FBio 1</i> <i>F or sBio 4</i>		
MICHAEL				
CUSHMAN				
MAULSBY	<i>sOra 7</i>			<i>FEng 8</i>
LEWIS		<i>wMus 2</i>	<i>wMus 1 Tu, 3 Th</i> <i>wMus 2 Th</i>	
DURKEE	<i>FChm 2, 83</i>	<i>FChm 2, 83</i>	<i>FChm 2, 83</i>	
DENISON	<i>wLat 5 Tu</i> <i>wLat 6 Th</i>			<i>wLat 7</i>
H. G. CHASE	<i>sPhs 3</i>	<i>sPhs 3</i>	<i>sPhs 3</i>	
WADE			<i>wGrk 6 Tu</i> <i>wGrk 7 Th</i>	<i>wGrk 8, 9, 10</i>
METCALF				
WHITTEMORE	<i>wOra 1 Th</i>			<i>wOra 2, 4, 6, 8</i>
LAMBERT	<i>wBio 1 Tu Th</i>	<i>wBio 1 Tu Th</i>		
COLWELL				<i>wGer 3b</i>
EVANS				
GARNER				
RANSOM				
KOLB	<i>sChm 7</i>	<i>sChm 7</i>	<i>sChm 7</i>	
RICHARDS	<i>sGeo 1</i> <i>Occasionally also Saturdays</i>			<i>FGeo 3</i> <i>Irreg F s Geo 4</i>
MEMBERS OF OTHER FACULTIES				<i>wHeb 2</i>



## Courses in Science

---

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

### COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

#### Freshman Year

**English 1.** The Theory and Practice of Composition. (*First half-year.*) See page 58.

**English 2.** A Study of Expression. (*Second half-year.*) See page 58.

**German 1.** Elementary German. See page 62.

*Or* **German 2.** Intermediate German. See page 62.

**French 1.** Elementary French. See page 64.

*Or* **French 2.** Intermediate French. See page 64.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

**Physics 1.** General Physics. See page 80.

**Chemistry 1.** General Chemistry. See page 83.

**Biology 1.** General Biology. See page 85.

**Physical Training.**

**Sophomore Year**

**German 2.** As above.

Or **German 3.** For the rapid reading of modern prose. (*First half-year.*) See page 63.

And **Biological German.** Reading of some important biological work. *Two hours a week. (Second half-year.)*

**French 2.** (For those entering with German.)

**Biology 2 or 3.** General Biology. See page 85.

**Mathematics 1.** Algebra, Geometry, Trigonometry. See page 78.

**Chemistry 2.** Qualitative Analysis. See page 83.

**Chemistry 3.** Qualitative Analysis. See page 83.

**Physical Training.**

**Junior Year**

**German 3 and Biological German** (for those entering with French), as above.

**Physics 3.** Physical Laboratory. See page 80.

**Chemistry 10.** Organic Chemistry. See page 84.

**Biology 2 or 3.** See page 85.

**Biology 4.** Elementary Physiology. See page 85.

**Biology 5.** Histology. See page 85.

**Senior Year**

**Geology 1.** Physiography. See page 86.

**Philosophy 1 or 2.** Introductory subject. (*First half-year.*) See Page 70.

**Philosophy 5.** Psychology. (*Second half-year.*) See page 71.

**Biology 7.** Botany. See page 85.

**Mineralogy 1.** Determinative Mineralogy. See page 87.

**Geology 2.** Geology. See page 86.

Special work (six term hours) in Biology, Geology, Chemistry, or Electricity.

**COURSE IN BIOLOGY**

PROFESSOR KINGSLEY

**Freshman Year**

As in the Freshman year of the course in General Science.

**Sophomore Year**

As in the Sophomore year of the course in General Science, except Mathematics.

**Junior Year**

**German 3B.** (*First half-year.*) **Biological German.** (*Second half-year,* for those entering with French.) **Biology 2** or 3, and 4, and 5, and **Geology**, as in the Senior year of the course in General Science.

**Philosophy 1** (or 2) and 5, as in the Senior year of the course in General Science.

**Chemistry 10.** Organic Chemistry. See page 84.

**Senior Year**

**Mineralogy 1** and **Geology 2**, as in the Senior year of the course in General Science.

**Biology 7.** Botany. See page 85.

**Biology 8.** **Special Research in Biology**, including dissertation. *Twelve hours.*

**MEDICAL PREPARATORY COURSE**

PROFESSOR KINGSLEY

**Freshman Year**

As in the Freshman year of the course in General Science.

**Sophomore Year**

As in the Sophomore year of the course in Biology.

**Junior Year**

As in the Junior year of the course in Biology.

**Senior Year**

**Philosophy 3.** Logic, especially Deductive. See page 71.

**Philosophy 9.** Ethics, the Theory of Morals. See page 72.

**Human Anatomy and Physiology.** (At Tufts Medical School.)

**Medical Chemistry.** (At Tufts Medical School.)



**COURSE IN CHEMISTRY**

PROFESSOR DURKEE

**Freshman Year**

**English 1.** The Theory and Practice of Composition. (*First half-year.*) See page 58.

**English 2.** A Study of Expression. (*Second half-year.*) See page 58.

**German 1.** Elementary German. See page 62.

*Or German 2.* Intermediate German. See page 62.

Those entering with German will take German 2. Others will take German 1.

**Mathematics 1.** Algebra, Solid Geometry, and Trigonometry. See page 78.

**Physics 1.** General Physics. See page 80.

**Chemistry 1.** General Chemistry. See page 83.

**Mechanical Drawing.** *Two hours a week (first half-year).* See page 88.

**Elective.** *Three hours a week (second half-year).*

**Physical Training.**

**Sophomore Year**

**German 2.** As above.

*Or French 1.* Elementary French. See page 64.

French 1 will be taken by those who entered without French. Others will take German 2.

**Physics 4.** Physical Laboratory. See page 80.

**Chemistry 2.** Basic Qualitative Analysis. See page 83.

**Chemistry 3.** Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 83.

**Chemistry 4.** Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 83.

**Chemistry 10.** Organic Chemistry. See page 84.

**Chemistry 11.** Theoretical Chemistry. See page 84.

**Physical Training.**

**Junior Year**

**Chemistry 5.** Quantitative Analysis (advanced). See page 83.

**Mineralogy 1.** See page 87.

**Chemistry 8.** Metallurgy. See page 83.

**Chemistry 12.** Theoretical and Inorganic Chemistry (advanced). See page 84.

**Chemistry 13.** Organic Chemistry (advanced). See page 84.

**Chemistry 14.** Laboratory work in Inorganic Preparations. See page 84.

**Chemistry 15.** Laboratory work in Organic Analysis. See page 84.

**Biology 1.** General Biology. See page 85.

**Economics and Sociology 1.** Elements of Political Economy, and Practical Problems. See page 77.

**Senior Year**

**Biology 4.** Elementary Physiology. See page 85.

**Chemistry 7.** Fire Assay. See page 83.

**Chemistry 9.** Gas Analysis. See page 84.

**Chemistry 13.** Organic Chemistry (advanced). See page 84.

**Elective.** *Six hours a week.*

**Research and Thesis.** *Four hour a week (first half-year) ; ten hours a week (second half-year).*



# Department of Engineering

---

## ADMINISTRATIVE BOARD

ELMER H. CAPEN, A.M., D.D., LL.D., *President*  
GARDNER C. ANTHONY, A.M., *Dean*  
CHARLES D. BRAY, C.E., A.M.  
WILLIAM L. HOOPER, A.M., PH.D.  
FRANK W. DURKEE, A.M.  
FRANK B. SANBORN, C.E., M.S.  
FRANK G. WREN, A.M.  
CHARLES H. CHASE, S.B.

---

HARRY G. CHASE, B.S., *Secretary*

---

## INSTRUCTORS

CHARLES D. BRAY, C.E., A.M. . . . . 98 Professors Row  
*Professor of Mechanical Engineering.*  
AMOS E. DOLBEAR, M.E., PH.D., LL.D. . . . 134 Professors Row  
*Professor of Physics and Astronomy.*  
CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row  
*Wade Professor of Modern Languages.*  
WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row  
*Professor of Electrical Engineering.*  
GARDNER C. ANTHONY, A.M. . . . . 14 Professors Row  
*Professor of Technical Drawing and Dean of the Department of Engineering.*  
FRANK W. DURKEE, A.M. . . . . 38 Professors Row  
*Professor of Inorganic Chemistry.*  
FRANK B. SANBORN, C.E., M.S. . 10 Buena Vista Park, Cambridge  
*Professor of Civil Engineering.*  
HENRY C. METCALF, A.B., PH.D. . . . . 92 Professors Row  
*Professor of Political Science.*  
FRANK G. WREN, A.M. . . . . 16 Professors Row  
*Professor of Mathematics.*

- CHARLES H. CHASE, S.B. . . . . Stoneham  
*Assistant Professor of Steam Engineering.*
- HARRY GRAY CHASE, B.S. . . . . 2 Curtis Avenue  
*Assistant Professor of Physics.*
- SAMUEL C. EARLE, A.M. . . . . 9 Electric Avenue  
*Assistant Professor of English.*
- THOMAS WHITTEMORE, A.B. . 372 Massachusetts Ave., Cambridge  
*Assistant Professor of English.*
- CHARLES C. STROUD, A.B., M.D. . . . . 72 Curtis St.  
*Instructor in Physical Training.*
- WIGHTMAN W. GARNER, A.B., PH.D. . . . . 20 West Hall  
*Instructor in Chemistry.*
- EDWARD H. ROCKWELL, S.B. . . . . 3 Haskell Street, Allston  
*Instructor in Civil Engineering.*
- EDWIN B. ROLLINS, B.S. . . . . 1 West Hall  
*Instructor in Electrical Engineering.*
- GEORGE F. ASHLEY . . . . . 11 Laurel St., Somerville  
*Instructor in Drawing.*
- LESLIE C. WELLS, A.M. . . . . 6 Dean Hall  
*Instructor in French.*
- CHARLES E. STEWART, S.B. . . . . 36 Packard Avenue  
*Instructor in Shopwork.*



## Courses of Instruction

Four courses are provided in Engineering, each requiring four years of study and leading to the degree of Bachelor of Science.

The courses are in Civil Engineering, Mechanical Engineering, Electrical Engineering, and Chemical Engineering.

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects for instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 109, Mechanical Engineering, page 111, Electrical Engineering, page 113, Chemical Engineering, page 115.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 116 to 136.

### FRESHMAN YEAR

[Alike for all courses.]

FIRST TERM	No.	SECOND TERM	No.
Algebra . . . . .	1	Analytical Geometry . . . . .	5
Trigonometry . . . . .	3	Descriptive Geometry . . . . .	21
Mechanical Drawing . . . . .	20	Mechanical Drawing . . . . .	20
Freehand Drawing . . . . .	22	Technical Sketching . . . . .	23
Carpentry, Turning, and Foundry . . . . .	40	Pattern Making . . . . .	42
Physics . . . . .	70	Physics . . . . .	70
English . . . . .	140	English . . . . .	141
French or . . . . .	161	French or . . . . .	161
German . . . . .	166	German . . . . .	166
Physical Training . . . . .	185	Physical Training . . . . .	185

**CIVIL ENGINEERING**

The studies which underlie general engineering and science—mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in advanced surveying, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

## CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 107.

## SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Forging . . . . .	44
General Chemistry . . . . .	50	General Chemistry . . . . .	50
Surveying . . . . .	90	Physical Laboratory . . . . .	72
English . . . . .	142	Surveying . . . . .	91
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Machine Drawing ( <i>elective</i> ) . . . . .	26

## JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	8	Topography . . . . .	92
Qualitative Analysis . . . . .	52	Masonry or Sanitary Engineering . . . . .	111
Topography . . . . .	92	Applied Mechanics . . . . .	113
Pure Mechanics . . . . .	112	Experimental Mechanics . . . . .	116
Experimental Mechanics . . . . .	115	Structural Design . . . . .	117
Steam Engine . . . . .	120	<i>* Three of the following electives:</i>	
<i>* Two of the following electives:</i>		Differential Equations . . . . .	9
Machine Drawing (advanced) . . . . .	27	Least Squares . . . . .	11
Machine Shop . . . . .	45	Machine Drawing . . . . .	26
† Electrical Laboratory . . . . .	73	Machine Design . . . . .	28
Electricity and Magnetism . . . . .	74	Qualitative Analysis . . . . .	53
Geology . . . . .	130	† Electrical Laboratory . . . . .	73
English . . . . .		‡ Dynamo-Electric Machinery . . . . .	77
Modern Languages . . . . .		Steam Engineering . . . . .	121
		English . . . . .	
		Modern Languages . . . . .	

## SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Railroad Surveying . . . . .	94	Highways . . . . .	93
Railroad Engineering . . . . .	95	Hydraulics . . . . .	110
Roofs and Bridges . . . . .	97	Sanitary Engineering or Masonry . . . . .	109
Political Economy . . . . .	180	Thesis . . . . .	135
<i>* Three of the following electives:</i>		<i>* Three of the following electives:</i>	
Mathematics . . . . .		Mathematics . . . . .	61
Machine Shop . . . . .	45	Quantitative Analysis . . . . .	65
Mineralogy . . . . .	59	Applied Chemistry . . . . .	67
Quantitative Analysis . . . . .	61	Assaying . . . . .	87
Gas Analysis . . . . .	63	§ Telegraph and Telephone . . . . .	96
Electricity . . . . .	82	Railroads—Economic Locations . . . . .	98
Applied Mechanics . . . . .	114	Bridge Design . . . . .	121
Structural Design . . . . .	118	Steam Engineering . . . . .	
Geology . . . . .	130	English . . . . .	
English . . . . .		Modern Languages . . . . .	
Modern Languages . . . . .			

\* Electives must be approved by the Department. † No. 73 must be taken for entire year.  
 ‡ Either 73 or 74 is required before taking 77. § Omitted in 1902-1903.

### MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through four terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and of boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

## MECHANICAL ENGINEERING

FRESHMAN YEAR — alike for all courses. See page 107.

## SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Surveying ( <i>elective</i> ) . . . . .	91

## JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	8	Differential Equations . . . . .	9
Machine Drawing . . . . .	27	Machine Design . . . . .	28
Qualitative Analysis . . . . .	52	Machine Shop . . . . .	45
Electrical Laboratory . . . . .	73	Electrical Laboratory . . . . .	73
Pure Mechanics . . . . .	112	Applied Mechanics . . . . .	113
Experimental Mechanics . . . . .	115	Experimental Mechanics . . . . .	116
Steam Engine . . . . .	120	Steam Engineering . . . . .	121
<i>*One of the following electives:</i>		<i>*One of the following electives:</i>	
Electricity and Magnetism . . . . .	74	Qualitative Analysis . . . . .	53
Topography . . . . .	92	Metallurgy . . . . .	57
English . . . . .		Dynamo-Electric Machinery . . . . .	77
Modern Languages . . . . .		Sanitary Engineering . . . . .	109
		†Masonry . . . . .	111
		English . . . . .	
		Modern Languages . . . . .	

## SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Design . . . . .	29	Engineering Laboratory . . . . .	123
Applied Mechanics . . . . .	114	Hydraulics . . . . .	110
Steam Engineering . . . . .	122	Thesis . . . . .	135
Political Economy . . . . .	180	<i>*Two of the following electives:</i>	
<i>*Two of the following electives:</i>		Mathematics . . . . .	61
Mathematics . . . . .	61	Quantitative Analysis . . . . .	65
Quantitative Analysis . . . . .	61	Applied Chemistry . . . . .	83
Gas Analysis . . . . .	63	Electricity . . . . .	87
Electricity . . . . .	82	†Telegraph and Telephone . . . . .	109
Roofs and Bridges . . . . .	97	Sanitary Engineering . . . . .	111
Structural Design . . . . .	117	†Masonry . . . . .	117
		Structural Design . . . . .	117
		Bridge Design . . . . .	98

\* Electives must be approved by the Department.

† Omitted in 1902—1903.



**ELECTRICAL ENGINEERING**

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

**ELECTRICAL ENGINEERING**

FRESHMAN YEAR—alike for all courses. See page 107.

**SOPHOMORE YEAR**

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Surveying ( <i>elective</i> ) . . . . .	91

**JUNIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	8	Differential Equations . . . . .	9
Qualitative Analysis . . . . .	52	Machine Design . . . . .	28
Electrical Laboratory . . . . .	73	Electrical Laboratory . . . . .	73
Pure Mechanics . . . . .	112	Electricity . . . . .	76
Experimental Mechanics . . . . .	115	Dynamo-Electric Machinery . . . . .	77
Steam Engine . . . . .	120	Applied Mechanics . . . . .	113
<i>* Two of the following electives:</i>		Experimental Mechanics . . . . .	116
Machine Drawing . . . . .	27	<i>* One of the following electives:</i>	
Electricity and Magnetism . . . . .	74	Mathematics . . . . .	
Topography . . . . .	92	Machine Shop . . . . .	45
English . . . . .		Qualitative Analysis . . . . .	53
Modern Languages . . . . .		Metallurgy . . . . .	57
		Topography . . . . .	92
		Sanitary Engineering . . . . .	109
		† Masonry . . . . .	111
		English . . . . .	
		Modern Language . . . . .	

**SENIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Electricity . . . . .	82	Electricity . . . . .	83
Electrical Laboratory . . . . .	79	Electrical Laboratory . . . . .	79
Dynamo Design . . . . .	88	† Telegraph and Telephone . . . . .	87
Political Economy . . . . .	180	Hydraulics . . . . .	110
<i>* Two of the following electives:</i>		Thesis . . . . .	135
Mathematics . . . . .		<i>* Two of the following electives:</i>	
Machine Design . . . . .	20	Mathematics . . . . .	
Quantitative Analysis . . . . .	61	Quantitative Analysis . . . . .	61
Gas Analysis . . . . .	63	Applied Chemistry . . . . .	65
Mineralogy . . . . .	59	Assaying . . . . .	67
Mathematics of Alternating Currents . . . . .	84	Electrical Topics . . . . .	85
Railroad Engineering . . . . .	95	Magnetism . . . . .	86
Applied Mechanics . . . . .	114	Highways . . . . .	93
Roofs and Bridges . . . . .	97	Railroads—Economic Locations . . . . .	96
		Sanitary Engineering . . . . .	109
		† Masonry . . . . .	111

\* Electives must be approved by the Department.

† Omitted in 1902—1903.

### CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics and the less technical engineering subjects, have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemical and advanced mechanical engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

## CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 107.

## SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185

## JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	8	Differential Equations . . . . .	9
Qualitative Analysis . . . . .	52	Qualitative Equations . . . . .	53
Organic Chemistry . . . . .	55	Metallurgy . . . . .	57
Electrical Laboratory . . . . .	73	Electrical Laboratory . . . . .	73
Pure Mechanics . . . . .	112	Applied Mechanics . . . . .	113
Experimental Mechanics . . . . .	115	Experimental Mechanics . . . . .	116
Steam Engine . . . . .	120	<i>* Two of the following electives:</i>	
		Machine Shop . . . . .	45
		Dynamo-Electric Machinery . . . . .	77
		Sanitary Engineering . . . . .	109
		† Masonry . . . . .	111
		Structural Design . . . . .	117

## SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Drawing . . . . .	27	Quantitative Analysis . . . . .	61
Mineralogy . . . . .	59	Applied Chemistry . . . . .	65
Quantitative Analysis . . . . .	61	Assaying . . . . .	67
Gas Analysis . . . . .	63	Theoretical Chemistry . . . . .	69
Political Economy . . . . .	110	Hydraulics . . . . .	180
<i>* Three of the following electives:</i>		Thesis . . . . .	135
Mathematics . . . . .		<i>* One of the following electives:</i>	
Electricity . . . . .	82	Mathematics . . . . .	
Roofs and Bridges . . . . .	97	Machine Design . . . . .	28
Applied Mechanics . . . . .	114	Sanitary Engineering . . . . .	109
Structural Design . . . . .	118	† Masonry . . . . .	111
		Structural Design . . . . .	117

\* Electives must be approved by the Department.

† Omitted in 1902-1903.

## Departments

---

### MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are embodied in Osborne's Calculus supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Spherical Trigonometry (4) Theory of Least Squares (10) and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of Potential Functions (13) are offered as instruments for investigating the more complex physical phenomena.



## MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra . . . . .	1	1	4	1	Wren	C E M Ch
3	Plane Trigonometry . . . . .	1	1	2	1	Wren	E E M Ch
4	Spherical Trigonometry . . . . .	4	1	3	1	Ransom	Elective
5	Plane Analytic Geometry . . . . .	1	2	3	1	Wren	C E M Ch
7	Differential and Integral Calculus . . . . .	2	1, 2	3	1	Wren	C E M Ch
8	Advanced Differential and Integral Calculus . . . . .	3	1	2	1	Rockwell	C E M Ch
9	Differential Equations . . . . .	3	2	2	1	Wren	E M Ch
10	Theory of Determinants . . . . .	4	1	3	1	Wren	Elective
11	Theory of Least Squares . . . . .	3 or 4	2	2	1	Wren	Elective
12	Vector Analysis . . . . .	4	1	3	1	Wren	Elective
13	Theory of the Potential Function . . . . .	4	2	3	1	Wren	Elective

### DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for the machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

The classes in both Elementary (26) and Advanced (27) Machine Drawing are conducted according to the methods of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

## DRAWING

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing . . . . .	1	1, 2	$\begin{Bmatrix} 2 \\ 1 \end{Bmatrix}$	$2\frac{1}{2}$ 1	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
21	Descriptive Geometry . . . . .	1	2	3	1	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
22	* Freehand Drawing . . . . .	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching . . . . .	1	2	1	2	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
25	Mechanism . . . . .	2	1	$\begin{Bmatrix} 2 \\ 1 \end{Bmatrix}$	$2\frac{1}{2}$ 1	Anthony	C E M Ch
26	Elementary Machine Drawing . . . . .	2	2	2	2	Anthony	E M Ch
27	Advanced Machine Drawing . . . . .	3	1	2	3	C. H. Chase	M
28	Elementary Machine Design . . . . .	3	2	3	3	Anthony	E, M
29	Advanced Machine Design . . . . .	3	1	3	3	Anthony	M

\* Not required of students entering College with this subject.

### SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

A half-year is given to acquiring experience in the use of the ordinary tools in Carpentry (40) and the use of the tools and lathe in Wood Turning. Following this, moulding or foundry work is taken up in preparation for Pattern Making (42) which constitutes the remainder of the Freshman course. Forging (44) gives an introduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding. In the Junior year instruction in metal work is continued, with vise and Machine Tools (45).

Project Work (48), which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the subject in machine-shop instruction upon special lines.

## SHOPWORK

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	{ Carpentry Wood Turning } * Foundry	1	1	2	3	Stewart	C E M Ch
42	Pattern Making . . . . .	1	2	1	3	Stewart	C E M Ch
44	Forging . . . . .	2	2	1	3	Stewart	C E M
45	{ Chipping and Filing } † Machine Tools	3	2	2	3	C. H. Chase	M
48	Project . . . . .	4	2	3	3	C. H. Chase	Elective

\* Carpentry, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks.

† Civil Engineers may elect No. 45 in the first term.



## CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations. It may cover the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57) is studied by lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. The lectures relate to technical applications of inorganic and organic chemistry.

## CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	3	1, 2		{ Durkee } { Garner }	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Garner	Ch
57	Metallurgy (Chemistry 8)	3	2	2	1	50	Durkee	Ch
59	Mineralogy	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Analysis (Chemistry 5)	4	1, 2	2	3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9)	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry	4	2	2	1	55	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Lamb	Ch
69	Theoretical Chemistry (Chemistry 9)	4	2	2	1	50	Lamb	Ch

## PHYSICS AND ELECTRICITY

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Work in the Physical Laboratory (72) comprises the more important quantitative determinants in mechanics, sound, light and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Elective work in elementary Electricity and Magnetism (74) is offered for those who may wish to supplement the lectures in general physics.

In Electrical Laboratory (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

## PHYSICS AND ELECTRICITY.

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures) . . . . .	1	1, 2	3	1	Dolbear	C E M Ch
72	Physical Laboratory . . . . .	2	2	2	1	{ H. G. Chase Rollins }	C E M Ch
73	Electrical Laboratory . . . . .	3	{ 1 2 }	{ 3 2 }	{ 2 2 }	{ Hooper Chase Rollins }	E M Ch
74	Electricity and Magnetism . . . . .	3	1	3	3	H. G. Chase	Elective
76	Electricity (Problems) . . . . .	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery . . . . .	3	2	3	1	Hooper	E
79	Electrical Laboratory . . . . .	4	1, 2	3	2	{ Hooper Rollins }	E

**PHYSICS AND ELECTRICITY**

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these arts and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This subject must be taken in connection with advanced machine design.



## PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
82	Alternating Current Machinery . . . . .	4	1	3	1	Hooper	E
83	Alternating Currents . . . . .	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment . . . . .	4	1	3	1	Hooper	Elective
85	Electrical Topics . . . . .	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of .	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone . . . . .	4	2	3	1	Dolbear	Elective
88	Dynamo Design . . . . .	4	1	3	1	Hooper	Elective

**ENGINEERING—CIVIL AND MECHANICAL**

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Topography (92) follows Surveying (90, 91) and comprises careful triangulation from stations near the college, accurate computations, location of contours, plotting and topographical drawing, determination of true north and south line, hydrographic surveying, measurement of flow of water and computation of horse-power available. Brief time also is given to mining surveying, plane table surveying, and determination of latitude, longitude, and time.

Highways (93) considers the location and construction of country roads and city streets; the physical properties of earth, broken stone, and various pavements used as road surface; economy of traction, grades, construction, and maintenance.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office-work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying . . . . .	2	1	2	3	{ Sanborn { Rockwell {	C E M Ch
91	Surveying . . . . .	2	2	2	2	{ Sanborn { Rockwell {	C
92	Topography . . . . .	3	1, 2	2	3	Sanborn	C
93	Highways . . . . .	4	2	1	1	Sanborn	C
94	Railroad Surveying . . . . .	4	1	2	3	Bray	C
95	Railroad Engineering . . . . .	4	1	3	1	Bray	C
96	Railroads—Economic Locations . . . . .	4	2	3	1	Bray	Elective

**ENGINEERING—CIVIL AND MECHANICAL**

Roofs and Bridges (97) is largely a study of various methods of computing stresses in common forms of trusses.

Bridge Design (98) is an elective class in design of framed structures of wood and steel.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water supply, disposal of sewage and garbage. Well-kept notes are required, and include reports of researches in engineering magazines and books, accounts of visits to laboratories, water works, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels. Tests are made in the new hydraulic laboratory.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, textbooks, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion, and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112. Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject open only to students who have passed satisfactorily in the required mechanics (112 and 113).

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
97	Roofs and Bridges . . . . .	4	1	3	1	Bray	C
98	Bridge Design . . . . .	4	2	2	3	Rockwell	Elective
109	* Sanitary Engineering . . . . .	3, 4	2	3	1	Sanborn	C
110	Hydraulics . . . . .	4	2	3	1	Sanborn	C E M Ch
111	* Masonry . . . . .	3, 4	2	3	1	Bray	C
112	Pure Mechanics . . . . .	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics . . . . .	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics . . . . .	4	1	3	1	Bray	Elective

\* Subjects 109 and 111 are given in alternate years. 109 will be given in 1902-1903, and 111 in 1903-1904.



**ENGINEERING—CIVIL AND MECHANICAL**

In Experimental Mechanics (115, 116) problems are set that require for analysis personal experimentation and correct application of the principles of pure and applied mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus.

Structural Design (117) is carried on in the lecture and drafting room, and is based upon the principles developed in previous engineering studies. The methods pursued are precisely those of a regularly organized engineer's office.

Structural Design (118) is an advanced subject in continuation of 117.

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers. Practice is also given in engine and boiler testing.

Geology (130) is a study, principally in the field, of rocks, minerals, earths, and foundations.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic that has interested the student is developed by extended personal research, design, or experimentation.

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics . . . . .	3	1	1	3	Sanborn	C E M Ch
116	Experimental Mechanics . . . . .	3	2	1	3	{ Bray } { Sanborn }	M
117	Structural Design . . . . .	3	2	2	3	Rockwell	C
118	Structural Design . . . . .	4	1	2	3	Rockwell	Elective
120	Steam Engine . . . . .	3	1	3	1	C. H. Chase	C E M Ch
121	Steam Engineering . . . . .	3	2	3	1	Bray	M
122	Steam Engineering . . . . .	4	1	3	1	{ Bray } { C. H. Chase }	M
123	Engineering Laboratory . . . . .	4	2	3	2	{ Bray } { C. H. Chase }	M
130	Geology . . . . .	3, 4	1	3	1, 2	Richards	Elective
135	Thesis . . . . .	4	2	2	4		C E M Ch

## ENGLISH

English is required throughout the Freshman and Sophomore years, the aim being to help the student to develop the power of thinking for himself; to learn to express his thoughts accurately, clearly, and interestingly; and to get some acquaintance with the best English literature, including the literature of science.

English 140 is a general introduction, English 141 a Study of Expression, English 142 a brief historical survey of English literature, and English 143 a study along special lines—description, narration, exposition, and argumentation, in technical and scientific writing.

Each subject will be presented by lectures and weekly or bi-weekly conferences, and in each subject the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, as far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

The following courses given in the College of Letters are approved electives for the Junior year.

English 5 (144) is Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week.

English 15 (146), Prose of the Nineteenth Century. Lectures, reading, brief critical essays.

English 18 (148), Shakespeare. Reading of selected plays, lectures, brief critical essays.

## ENGLISH

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English . . . . .	1	1	2	1	Earle	C E M Ch
141	English . . . . .	1	2	3	1	Whittemore	C E M Ch
142	English . . . . .	2	1	3	1	Earle	C E M Ch
143	English . . . . .	2	1	2	1	Earle	C E M Ch
144	English 5 . . . . .		1	2	1	Shipman	Elective
146	English 15 . . . . .		2	2	1	Whittemore	Elective
148	English 18 . . . . .		2	3	1	Whittemore	Elective

### MODERN LANGUAGES

An elementary knowledge of French or German, equivalent to subject 160 or 165, is required for admission to any course in Engineering.

The language offered in entrance will be continued during the first two years, unless the candidate for admission receives credit for the equivalent of Intermediate French (161) or Intermediate German (166), in which case he may take the alternative language for the two years.

Any subject in modern languages offered in the College of Letters may be elected by an Engineer, properly qualified, during his Junior or Senior year, subject to the approval of the instructors in the elected subject. Those who take German pursue the regular college course, but for those engineers who take French separate subjects are offered, especially adapted to their needs. Elementary French (160) is the equivalent of the work required for the entrance examination. Intermediate French (161) comprises a review of verbs and of syntactical difficulties, and the reading of a considerable amount of ordinary prose, with special attention paid to idiomatic translation. Advanced French (162) includes reading of difficult and technical prose, to enable the student to read rapidly and accurately, without translation, such French as he will find of practical value.

### POLITICAL ECONOMY

Political Economy 180, designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

### PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.



## MODERN LANGUAGES

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
160	French, Elementary . . . . .		1, 2	4	1	Earle	
161	French, Intermediate . . . . .	1	1, 2	3	1	Wells	C E M Ch
162	French, Advanced . . . . .	2	1, 2	3	1	Wells	C E M Ch
165	German, Elementary . . . . .		1, 2	3	1	Colwell	
166	German, Intermediate . . . . .	1	1, 2	3	1	Colwell	C E M Ch
167	German, Advanced . . . . .	2	1, 2	3	1	Fay	C E M Ch

## OTHER SUBJECTS

180	Political Economy . . . . .	4	1	3	1	Metcalf	C E M Ch
185	Physical Training . . . . .	1, 2	1, 2†	3	1	Stroud	C E M Ch

† From the middle of November to the middle of March.



# The Graduate Department

---

## ADMINISTRATIVE BOARD

ELMER H. CAPEN, A.M., D.D., LL.D., *President*

AMOS E. DOLBEAR, M.E., PH.D.

GEORGE T. KNIGHT, A.M., D.D., *Secretary*

J. STERLING KINGSLEY, S.D.

ARTHUR MICHAEL, A.M., PH.D.

WILLIAM L. HOOPER, A.M., PH.D.

WILLIAM K. DENISON, A.M.

---

## INSTRUCTION

Graduate instruction is given by the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

## DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

ENGLISH,	ECONOMICS AND SOCIOLOGY,
MODERN LANGUAGES,	MATHEMATICS,
LATIN,	CHEMISTRY,
GREEK,	BIOLOGY,
HISTORY AND PUBLIC LAW,	ELECTRICITY.

The Degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose

course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions :—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Executive Board of the Graduate Department. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Administrative Board of the Graduate Department before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Administrative Board of the Graduate Department.

The candidate for the degree of Doctor of Philosophy must make a written application to the Secretary of the Board at least one month before Commencement, when the thesis must be ready. For other conditions, applying to special departments, see pages 144, 145.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

#### DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have taken, as major students in English, at least eighteen term hours, selected from the subjects provided. Subjects 7\*, 17, 18, 19, 20, 23, 24, 25, and 26, so far as these have not been anticipated as undergraduate work, may be counted toward the master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire

\* See "Departments of Instruction," pages 57 to 93.



work for the advanced degree may consist of a special course of study, undertaken under the direction of the department.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes.\* To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 2 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

LATIN.—Candidates for the degree of Master of Arts in Latin must have completed satisfactorily Latin 1,\* 2, 3 or 4, and 5, or equivalents. Greek may be taken as minor work with Latin. A reading knowledge of German is essential, and of French and Italian is desirable, for students intending to take advanced work in Latin. Graduate students, when pursuing subjects especially designed for undergraduates, are expected to do an extra amount of work in them. The required thesis must embody the result of the special investigation of some author or period, or of some philological or archaeological subject.

GREEK.—Candidates for the degree of Master of Arts in Greek must have completed Greek 1,\* 2, 3, and 5, or equivalents for these subjects. Latin may be taken as minor work with Greek. Graduate students will be expected to do work of advanced character, whether in classes with undergraduates or on special lines of investigation assigned by the instructor. The required thesis, on some approved topic, relating to some

---

\* See "Departments of Instruction," pages 57 to 93.

author, period, or philological problem, must give evidence of this advanced attainment. A reading knowledge of German and French is necessary for students intending to do advanced work in Greek.

**HISTORY AND PUBLIC LAW.**—Every graduate student who intends to become a candidate for a degree must have taken as undergraduate work History 1,\* 2, and 3, and must be able to read French works. A working knowledge of German is desirable, and may in some cases be necessary. Of the subjects announced in the program of this department, the more advanced subjects will be accepted as part of the work leading to the degree of Master of Arts. In addition to these subjects, work will be laid out for graduate students along such special lines as individuals may desire to pursue. Certain collateral subjects may be called for in such cases. Graduate students will be expected to do something in the way of independent investigation of a definite subject, the results to be embodied in the thesis required to obtain the degree.

**ECONOMICS AND SOCIOLOGY.**—The candidates for the degree of Master of Arts in Economics and Sociology will be expected to have met, as an undergraduate, the requirements of a major student in that department. Candidates who are not graduates of Tufts College must satisfy the department that they are qualified by previous training to enter upon the desired course of study. Any subject but Economics 1 may be offered as graduate work, provided it has not been counted toward the first degree, but the work must be done with high credit. In addition to the regular work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates designing to pursue them. A reading knowledge of French and German is desirable. Emphasis is placed upon the requirement of a thesis and of an oral examination.

**MATHEMATICS.**—Graduate students in Mathematics must have passed creditably the prescribed undergraduate work in

\* See "Departments of Instruction," pages 57 to 93.

this department,—Mathematics 1,\*—and may do graduate work from that point or from such more advanced point as they may have attained. They are required to complete all the subjects offered by the department, from Mathematics 2 to Mathematics 10, to receive the degree of Master of Arts.

CHEMISTRY.—Candidates for the degree of Master of Arts must have completed subjects 1,\* 2, 3, and 10, or their equivalents. Subjects 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, are offered for graduate students, and satisfactory work must be done in at least five of these subjects. The candidate must present an acceptable thesis and pass satisfactory examinations in all of the subjects studied.

BIOLOGY.—Candidates for the degree of Master of Arts in Biology must have already done work equivalent to Biology 2,\* 3, and 4; or, lacking that, they must take omitted subjects in addition to their graduate work. The work will be done on the lines of comparative anatomy, histology, or embryology, and will include a thesis embodying original research.

ELECTRICITY.—The candidate for the master's degree in Electricity must have done substantially the work in that department required of the Bachelor of Electrical Engineering. This involves the election during his undergraduate course of studies in this department, if it is expected that the degree will be obtained within one year of graduate study.

#### DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

CHEMISTRY.—Candidates must be able to translate scientific German readily and accurately before beginning their work, and must have already taken subjects 1\* to 7 inclusive, 9 and 10, or equivalent work. Unless previously qualified, they must take 11, 12, 13, 14, 15, and 17, and devote at least one year to subject 16. Examinations in the above subjects must be satisfactorily passed, and a thesis embodying an original investigation in Chemistry must be presented.

A well-equipped laboratory is open to graduate students who

\* See "Departments of Instruction," pages 57 to 93.

may wish to pursue special lines of research, and the department is prepared to offer every facility for the encouragement of original investigations.

**BIOLOGY.**—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

**HISTORY AND PUBLIC LAW.**—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History I, 2, and 3, and Public Law I. For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details.

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

### FELLOWSHIPS

**THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.**—In accordance with the spirit of the gift of the late



Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of an ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

### TUITION

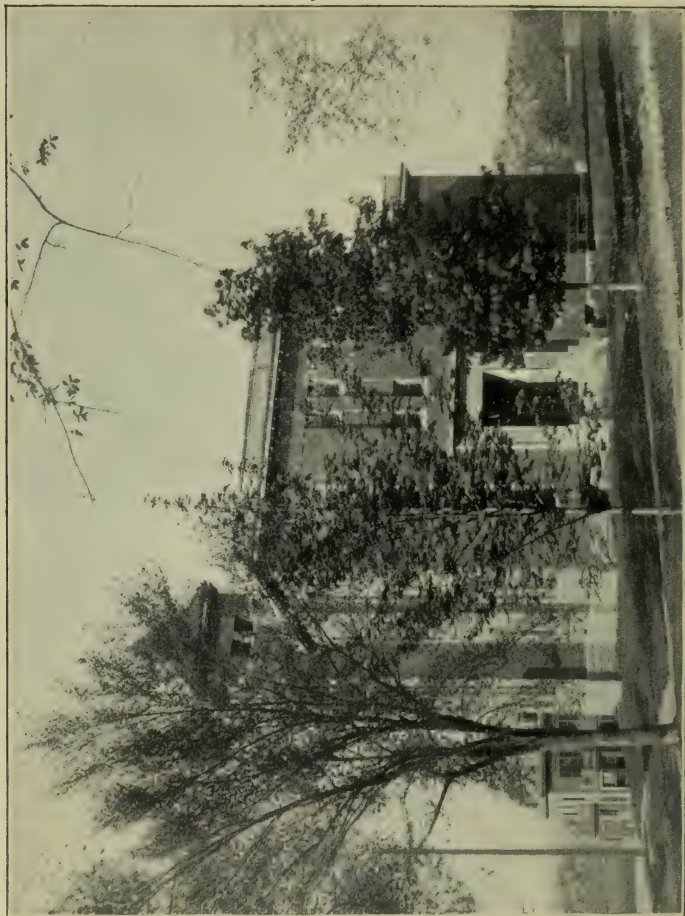
The tuition fee for the whole course for the degree of Master of Arts, Civil Engineer, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.



THE  
JOHN CREER  
LIBRARY.



METCALF HALL

## Buildings and Equipment

---

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

### LIBRARY

The library contains about forty-six thousand bound volumes and thirty-one thousand seven hundred pamphlets. The College regularly receives more than two hundred periodicals. By favor of Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five years, has been about twenty-three hundred volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the

collection of the Universalist Historical Society (fifty-four hundred volumes and several thousand pamphlets), to which, on application, students have free access ; in the Barnum Museum is the department library of Natural History, numbering about sixteen hundred volumes and forty-five hundred pamphlets ; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about fifty-five thousand bound volumes available for use.

### BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance, and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facili-

ties, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

### **GODDARD GYMNASIUM**

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well fitted for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing machines, a large wrestling mat, and facilities for basket ball. The gallery contains a running-track, one thirty-second of a mile in length. There is also a well lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

### **CHEMICAL BUILDING**

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

### **ROBINSON HALL**

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

**PHYSICAL LABORATORIES.** The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.



Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, chronograph, and spectrometer from the Société Gènevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is provided, for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

**ELECTRICAL LABORATORIES.** The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Morley type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

### BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school. It is used also for the department of drawing and for the shop-work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are forge, moulding, pattern, and machine shops. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shops, and also serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

### THE POWER STATION

This building is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. A twenty-five horse-power Sturtevant engine, directly coupled to a Mordey Alternator, furnishes power for driving the other generators. A ten horse-power Columbus gas-engine is used for lighting and power. A two-and-three-phase dynamo, and two 10-kilowatt direct current generators constitute the machines in use. There is a storage battery of sixty elements, which, together with the other apparatus used in this station, is designed for experimental purposes.

### THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms

for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

## General Information

---

### RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

### TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work, done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Eight numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Develop-

ment of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in *Sterna Wilsoni*," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,' " by D. L. Maulsby; "The Ossicula Auditus," by J. S. Kingsley; "The Development of the Eye Muscles in *Acanthias*," by Arthur B. Lamb; "The Cranial Nerves of *Amphiuma*," by J. S. Kingsley; and "The Systematic Position of the *Cæcilians*," by J. S. Kingsley. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

### REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by the Committee on Freshman Plans of Study, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made by classes as appears below, classification being based upon the official list last printed:—

Seniors and *all* Specials, 8.45 to 9.30 A.M.

Juniors, 9.30 to 10.15 A.M.

Sophomores, 10.15 to 11 A.M.

Freshmen, 11.00 A.M. to 12 M.

The Committee on Freshman Plans of Study will be in session for consultation from three to five, of the afternoon preceding registration day.



Arrangements for consultation may be made by individual students, toward the close of the first term.

Students will make their plans of study subject to the following regulations :—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required. The following program for registration is followed, classification being based upon the last official printed list :—

Seniors, 8.45 to 9.15 A.M.

Juniors, 9.15 to 9.45 A.M.

Sophomores, 9.45 to 10.15 A.M.

Freshmen, 10.15 to 10.45 A.M.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed for their respective classes, or who fail to file with the proper official their plans of study and other required data before one o'clock P.M. on the day of registration. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

### PROMOTIONS

Students in the courses leading to the degrees of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

### MAJOR SUBJECTS

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

### ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

### SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish

to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.
2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.
3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.
4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

### TERMS AND VACATIONS

The college year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

### ABSENCES

In case of absence, from any cause, involving more than three consecutive program appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

### EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students leaving College before the completion of any term are required to notify the Secretary of the Faculty at once. In case of failure to file such notification, tuition will be charged for the full term.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year. Non-resident women students in the College of Letters are subject to a fixed annual charge of ten dollars, in return for which a place for study is provided in Ballou Hall. Non-resident men students may have a study provided in one of the dormitories, on application to the Bursar.

Every student who enters the College of Letters is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after



Commencement, and is payable on the first day of the following college year; but the second bill of the senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in private families at \$3.50 to \$5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition . . . . .	\$100.00	\$100.00
Physical Culture, including gymnasium and grounds . . . . .	10.00	10.00
Reading-room . . . . .	1.00	1.00
Half room-rent . . . . .	25.00	91.00
Hospital . . . . .	2.00	2.00
Board, \$3.50 to \$5.00 a week (36 weeks) . . . . .	126.00	180.00
Total . . . . .	\$264.00	\$384.00

For the expenses of the students of Engineering, see the special pamphlet issued by the Department of Engineering.

### OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean may be found in his office during the forenoon, except for class engagements. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

### SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

*Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.*

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships of one hundred dollars each for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP.—Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

The following scholarships of fifty dollars each are awarded annually :—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years of his course, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory. This scholarship will not be available until 1903-1904.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred



dollars, at four per cent. This fund now amounts to about three thousand dollars.

APPOINTMENTS.—The pay of a chapel monitor is *fifty dollars* a year; that of the organist, *one hundred and fifty dollars*.

### PRIZES

GODDARD PRIZES.—In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the Agricola of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the Ars Poetica of Horace.

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

PRESIDENT BALLOU PRIZES.—A friend of the college has provided for the year 1902-1903 two prizes, of *thirty* and *ten dollars* respectively, for the encouragement of debate. These are

known as the President Ballou Prizes, in memory of the first President of the College.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,—the first Wednesday after the Thanksgiving recess.

### HONORS AND DEGREES

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Courses in Liberal Arts who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (\*) will not count for Honors. Those marked with a double asterisk (\*\*) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.
2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.
3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: ELECTRICITY.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (\*) or with a double asterisk (\*\*) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

THE DEGREE OF BACHELOR OF ARTS, will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 53 to 55.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the Course in General Science, the Course in Biology, or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 99 to 103.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, or Mechanical Engineering will be conferred upon students who shall have completed the required course, as defined on pages 107 to 115.

Students of the courses in Liberal Arts may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, or Mechanical Engineering, after a graduate course of one year in the Engineering Department.

For the advanced degrees of MASTER OF ARTS, DOCTOR OF PHILOSOPHY, CIVIL ENGINEER, ELECTRICAL ENGINEER, and MECHANICAL ENGINEER, see announcement of the Graduate Department, pages 139 to 146.



# THE DIVINITY SCHOOL



## Faculty of the Divinity School

---

ELMER H. CAPEN, D.D., LL.D., PRESIDENT

CHARLES H. LEONARD, A.M., D.D., DEAN

*Goddard Professor of Homiletics and Pastoral Theology*

WILLIAM G. TOUSEY, A.M., D.D.

*Ryder Professor of Ethics and the Philosophy of Theism*

GEORGE T. KNIGHT, A.M., D.D., SECRETARY

*Packard Professor of Christian Theology*

GEORGE M. HARMON, A.M., D.D.

*Professor of Biblical Theology.*

WARREN S. WOODBRIDGE, A.M., B.D.

*Woodbridge Professor of Applied Christianity*

DAVID L. MAULSBY, A.M.

*Professor of English Literature and Oratory*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English*

HENRY C. METCALF, A.B., PH.D.

*Professor of Political Science*

### NON-RESIDENT LECTURERS

FREDERICK W. HAMILTON, A.M., D.D.

*Preaching*

HENRY W. RUGG, D.D.

*Christian Missions*

JAMES M. PULLMAN, D.D.

*Christian Economics*

BYRON GROCE, LL.T.D.

*The Preacher as Teacher*

HAROLD WILLIAMS, A.M., M.D.

*The Care of the Body*

THE  
JOHN CREER  
LIBRARY.



MINER HALL

## The Divinity School

---

The Divinity School is one of the co-ordinate departments of Tufts College; and the general advantages of the College are enjoyed by its students. The College Library, the Museum of Natural History, the Gymnasium, are accessible to Divinity Students; and courses of study in the College of Letters are open to them, subject, however, to the discretion of the Faculty. The graduates of the Divinity School, in common with the graduates of the other departments, are eligible to membership in the Alumni Association of Tufts College.

### CONDITIONS OF ADMISSION

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts (whose course of study has included Greek) are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. They enter the Second Year of the course summarized on pages 183, 184. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their College course differs from the A. B. course.

3. Persons who have not had college training must approve themselves to the Faculty, by examination or otherwise, as qualified to enter upon a four years' course of study which, in addition to the strictly theological subjects, includes psychology, logic, literature, and history. Students who take this course may, at any time, by vote of the Faculty, become candidates for the degree of B. D.

4. Students from other theological schools will be admitted *ad eundem* on presenting certificates of regular dismission, but

none will be received as candidates for the degree of B.D. after the opening of the Senior year.

*Every student is expected to be present at the opening of the academic year.*

## Departments of Instruction

### PSYCHOLOGY

PROFESSOR KNIGHT

The class is elementary. It is designed to present the fundamental principles of psychology. It aims especially to prepare the student for work in other departments of the School, and has constant reference to use in the professional life of the minister.

*Three hours a week for the first half-year.*

### LOGIC

PROFESSOR TOUSEY

1. The First Year includes the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

2. Second-Year students are exercised more especially in the application of logical principles. A review of the fallacious tendencies of the mind is followed by an extended study of fallacies, as exemplified in classic examples and in current discussion. The work concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed; the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

*1. Four hours a week for the second half-year.*

*2. Two hours a week for the first half-year.*



**ENGLISH**

PROFESSOR MAULSBY AND ASSISTANT PROFESSOR WHITEMORE,  
OF THE COLLEGE OF LETTERS

The efficiency of the clergyman is so largely conditioned by literary ability that much emphasis is placed upon the study of English. Opportunity is given to the student to elect in the College of Letters, in the direction both of composition and English literature. Well-directed practice in English composition affords direct aid in the formation of literary style, while the influence of the study of the masterpieces of literature, though indirect, is no less powerful in developing a feeling for appropriate language. Moreover, the great poets and prose writers abound in suggestion for the public speaker, in both their thought and its expression. In consequence, divinity students are expected to take such of the offered subjects as are adapted to their individual needs and available time. Some are advised to continue this work throughout their whole theological course.

**OLD TESTAMENT**

PROFESSOR WOODBRIDGE

In the absence of a specialist in this department, the aim is chiefly to secure a working knowledge of the Old Testament in English. Instruction is presented in five parts:—

1. History of the book: the English Bible and other versions; the manuscripts; the canon.
2. History of the people Israel, from the migration to the Christian era, derived from the original sources, with the aid of numerous secondary authorities.
3. History of the literature, origin of particular books and forms of literature, general introduction.
4. Critical and interpretative reading from the Pentateuch, the Prophets, the Law, the Psalms, and the Wisdom literature.

*Three hours a week for two years.*

5. The Hebrew Language. *Three hours a week for a year.*

**NEW TESTAMENT**

PROFESSOR HARMON

1(a). For the students of the First Year a special study is made of the preparation for Christianity in the thought and sentiment of the Jewish people, the character of their institutions, and their social and religious condition. A similar study is then made of the Graeco-Roman world.

1(b). A course in New Testament Greek is provided for beginners.

2. In the Second Year the sources of the text of the New Testament are considered, with the principles employed in determining the true text, the aim being to render the student intelligent as to the procedure in textual criticism and the bearing this procedure has on the work of exegesis. The history of the canon for the first two centuries, and the historical and literary criticism of the Gospels, are next treated, to secure on the part of the student an understanding of the principal problems involved and the grounds of their discussion, the habit of sober and sound criticism, and a knowledge of the nature and contents of the Gospel writings.

In dealing with the life of Jesus, notes on methods of correct interpretation are given the class, and their application is required in its exegetical work. The significant points and phases in the life and ministry of Jesus are selected and considered, passages from the Greek of the Synoptic Gospels being employed to obtain a knowledge of the mind of Jesus, his relations to the parties and people of his time, the methods he pursued in his ministry, the course of facts in his life, and the doctrines he taught. Incident to this study, the critical points in dispute are considered as they arise. Historical and archaeological questions are examined in their natural connections.

3. In the Third Year, the history and doctrines of the apostolic Church are studied, the book of Acts being used as the basis. This writing is first examined as an historical authority: passages from it in Greek are chosen, giving the significant stages in the external growth of the church and in its internal

development: and these are studied with the aim to trace the first realization of the life of Jesus in the world. The epistles of St. Paul are critically examined in the order of their origin in his ministry. Critical and exegetical studies of Hebrews and of the Johannine writings conclude the work.

As a part of this study, the theology of the New Testament is taken up. The attempt is made to discover the teaching of Jesus contained in the Synoptic Gospels. With this teaching as the basis, the individual interpretations of the several Synop- tists, of the author of the Fourth Gospel, of St. Paul in his earlier and later epistles, of the author of Hebrews, and of the writers of the Catholic Epistles are compared, each writing being first considered by itself. The aim is to obtain the common elements of teaching, and also what is distinctive in each writer and time.

1(a). *Three hours a week for a year.*

1(b). *Three hours a week for a year.*

2. *Three hours a week for a year.*

3. *Three hours a week for a year.*

## THE HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the Records of the Past, Müller's edition of the Sacred Books of the East, Müllers own writings, the series entitled Non-Christian Religious Systems; and in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Maspero, Jastrow, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the Encyclopaedia Britannica.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of ancient and modern India, China, Japan, and of Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

## 2. The history of Christianity: Church History.

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the Ante-Nicene Fathers, and others; the chief secondary authorities on general church history, such as the

works of Schaff, Fisher, Neander, Hase, Alzog; the special historical works of Fisher, Dorner, Ballou, Eddy; and the American Church History series.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

*1. Three hours a week for the first half-year.*

PROFESSOR KNIGHT.

*2. Four hours a week for a year.*

PROFESSORS WOODBRIDGE AND KNIGHT.

## ETHICS

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

During the second half of the year, the class attends more especially to practical ethics, dealing with the leading problems of the individual and the social life, and giving particular attention to such subjects as rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction through-



out is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

*Three hours a week for a year.*

## PHILOSOPHY OF THEISM

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the final problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

*Three hours a week for a year.*

## THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural

theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions,—the doctrine of God, the doctrine of man, the doctrine of salvation, and the doctrine of the future life. The traditional sub-divisions are noted historically, but are accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages:—

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.
2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.
3. The organization of the results into a scientific product.
4. Illustrative applications to practical problems.—ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H. Martensen, J. S. Dodge, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

*Four hours a week for the first half-year, and three for the second half-year.*

## ECONOMICS

PROFESSOR METCALF

Students who have not had this subject in College are expected to take at least the introductory portion, marked "Ele-

ments of Economics." (See page 77.) The aim is to acquaint the student with the principles of secular society, especially those illustrated in the production, exchange, and consumption of wealth.

*Three hours a week for the first half-year.*

### APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the life of the world. The objective point is the efficiency of pastor and church in the function of social uplift. The course covers three half-years, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

*Two hours a week for a year, and three for a half-year.*

### HOMILETICS AND PASTORAL CARE

PROFESSOR LEONARD

The course in Homiletics covers one-half of the Second Year and all of the Third and Fourth years, and includes the study of the most characteristic and instructive periods in the history of preaching; dictations and lectures on the idea and structure of the sermon; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts; the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, not less than six during the year, all of

which are criticised by the class and by the professor: studies during the Fourth Year on invention and arrangement of material, modes of development, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

The course in Pastoral Care considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications, spiritual, mental, social, of a good pastor; the methods of forming and strengthening a parish: the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

*Three hours a week for two-and-one-half years.*

## ORATORY

PROFESSOR MAULSBY

The object of the instruction in the department of Oratory is to inculcate a natural, impressive, and reverent manner of reading the Bible and the hymn-book, and also to cultivate in preaching a delivery that shall be forcible and sincere. To this end the work at first involves consideration of the fundamental principles that underlie all oratory, accompanied by practice to assimilate these principles. As it progresses, the work becomes specifically adapted to the needs of students of

divinity, and includes Scripture and hymn-reading, and practice in both written and unwritten discourse.

*Two hours a week for the second half-year.*

### PHYSICAL TRAINING

DR. STROUD

Regular exercise in the Gymnasium is ordinarily required, three hours a week of men students, from November to April, during the first two years. The kind of exercise prescribed for each man depends upon his physical condition, as determined by careful medical examination. Provision is made for continuing physical exercise throughout the whole course, according to individual needs.



# Course of Study \*

## FIRST YEAR

**Psychology.**—Elementary: the Relations between Mind and Body; the Principles of Psychology; Stout's Manual of Psychology as a text-book; References to Wundt and Sully and James. *Three hours a week, first half-year.* PROFESSOR KNIGHT.

**Logic.**—The First Principles of Logic; Concepts and Propositions; Immediate Reference; Deduction; Induction; Analogy; Hypothesis. *Four hours a week, second half-year.* PROFESSOR TOUSEY.

**English.**—One or more subjects, to be selected, under direction, from those offered in the College of Letters (see pages 58 to 60.) *Three hours a week.*

**New Testament.**—History of the Times of Jesus. *Two hours a week.* PROFESSOR HARMON.

**Greek of the New Testament.**—*Three hours a week.* PROFESSOR HARMON.

**Oratory.**—The Principles of Oratory Exemplified in Practice. *Two hours a week, second half-year.* PROFESSOR MAULSBY.

**A Science or Language Study** (to be selected under direction of the Faculty). *Three hours a week.*

## SECOND YEAR

**Logic.**—Fallacies; Analysis of Arguments; Ethics of Belief. *Two hours a week, first half-year.* PROFESSOR TOUSEY.

**Old Testament.**—General Introduction. *Three hours a week.* PROFESSOR WOODBRIDGE.

**New Testament.**—Criticism of the Synoptic Gospels, Textual and Historical; Hermeneutics; Life and Teachings of Jesus from the Greek of the Synoptic Gospels, with studies from the life of his time. *Three hours a week.* PROFESSOR HARMON.

**Church History.**—History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Four hours a week.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

\* Students holding the degree A.B. begin with the Second Year.

**Homiletics.**—History of Preaching; The Idea and Structure of the Sermon; Homiletic Analysis. *Three hours a week, second half-year.*

PROFESSOR LEONARD.

**Oratory.**—Practice in the reading of Scripture, Hymns, and in formal and extemporaneous speaking. *Two hours a week, second half-year.*

### THIRD YEAR

**Old Testament.**—Special Studies in Old Testament Literature. *Three hours a week.*

PROFESSOR WOODBRIDGE.

**New Testament.**—Criticism of the Acts and the Epistles; History and Doctrines of the Apostolic Church, from the Greek of the Acts and the Epistles; Criticism, Exegesis, and Doctrines of the Johannine Writings. *Three hours a week.*

PROFESSOR HARMON.

**Ethics.**—The Moral Nature; Ethical Theory; Practical Ethics; Ethics and Theism. *Three hours a week.*

PROFESSOR TOUSEY.

**Systematic Theology.**—Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. *Four hours a week, first half-year; three hours a week, second half-year.*

PROFESSOR KNIGHT.

**Homiletics.**—Study of Sermons of Eminent Preachers; Lectures; Sermon Writing and Preaching. *Three hours a week.*

PROFESSOR LEONARD.

**Applied Christianity.**—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, second half-year.*

PROFESSOR WOODBRIDGE.

### FOURTH YEAR

**The Non-Christian Religions.**—Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Three hours a week, first half-year.*

PROFESSOR KNIGHT.

**Philosophy of Theism.**—The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.*

PROFESSOR TOUSEY.

**Economics.**—Elements of Economics. The general problems of the production, exchange, and consumption of wealth. Text-book: Bullock's Introduction to the Study of Economics; Lectures. *Three hours a week, first half-year.*

PROFESSOR METCALF.

**Homiletics.**—Homiletic Analysis; Lectures on Preaching; Composition and Delivery of Sermons. *Three hours a week.*

PROFESSOR LEONARD.

**Applied Christianity.**—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, first half-year: and three hours a week, second half-year.* PROFESSOR WOODBRIDGE.

**Pastoral Theology.**—The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Three hours a week.*

PROFESSOR LEONARD.

---

## General Information

### RELIGIOUS EXERCISES

Devotional exercises, conducted by the professors and the students, are held daily in the chapel. Members of the upper classes prepare sermons, and preach them in turn before the class. An active branch of the Young People's Christian Union holds regular meetings for religious conference.

### ELECTIVE STUDIES

Students are permitted to elect studies in other departments of the College, subject, however, to the discretion of the Faculty. Opportunities for pursuing advanced studies are offered to graduates and to others sufficiently qualified.

### LIBRARIES AND LECTURES

Students have free access to the general library of the College and to the valuable library of the Universalist Historical Society. Important public libraries of Boston are open to students for consultation.

Supplementary lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of

the school to encourage the judicious use of these important instrumentalities of culture.

### DEGREES

The degree of Bachelor of Divinity is granted to students already holding the degree A.B. who complete satisfactorily the regular course of three years, and to others who make equivalent attainments. No degree, however, is given for less than a year of resident work.

Some students, of exceptional ability and industry, while in the College of Letters, find time to elect work in the Divinity School, and thus are able to obtain the two degrees (A.B. and B.D.) in six years.

Those who seek no degree, but desire a partial or special course of one or two years, may arrange therefor with the Faculty.

THE DEGREE OF BACHELOR OF ARTS. Holders of the degree B.D. who may desire to obtain the degree A.B. are required to complete satisfactorily ninety-six term hours of work, under the following conditions:—

1. That the ninety-six term hours shall include all of the prescribed work necessary for the degree of Bachelor of Arts, as stated on pages 53 to 55.
2. If any of these prescribed hours have been taken while the candidate was in the Divinity School, and have been counted for the degree of Bachelor of Divinity, an equal number of free electives shall be substituted for them.
3. Any work satisfactorily done in the College of Letters while the candidate was in the Divinity School, which has not been counted towards the degree of Bachelor of Divinity, may be included in the ninety-six term hours required.

The degree of Master of Arts may be received by Bachelors of Arts who did not apply for the degree of B.D., after taking with credit an approved course of one year or more in this school, under conditions defined in the statement of the Graduate Department.

### LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Third Year. Before that time the members of the Divinity School are not allowed to preach.

### BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

### EXPENSES

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it. A remission of two-fifths of this amount may be made by the Executive Committee of the Trustees to students who cannot be accommodated in Paige Hall, or who live at home. The necessary expenses for board, washing, gas, and gymnasium-charges do not exceed two hundred dollars a year.

### BONDS AND DEPOSITS

Each student who enters the Divinity School is required to deposit with the Bursar of the College either a bond, with two satisfactory sureties, for the amount of one hundred dollars, or the sum of fifty dollars in money, which sum will bear interest at the rate of four per cent. yearly and will be returned to the student when he leaves the Divinity School, his term bills first having been paid in full.



**PECUNIARY AID: SCHOLARSHIPS AND SPECIAL FUNDS**

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School; and the Faculty is authorized to assign special scholarships to those whose circumstances require this extra help. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

**THE GREENWOOD SCHOLARSHIP.**—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

**THE DOCKSTADER SCHOLARSHIP.**—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships of fifty dollars each are for the benefit of students in the Divinity School:—

**THE WHITTEN SCHOLARSHIP.**—Founded by Mrs. Maria F. Whitten, of Cambridge.

**THE HOLT SCHOLARSHIP.**—Founded by Miss Celia Holt, of Stafford, Conn.

**THE HENRY L. BALLOU SCHOLARSHIP.**—Founded by Susan Ballou, of Woonsocket, R. I.

**TWO BRADLEE SCHOLARSHIPS.**—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

**TWO GOLDTHWAITE SCHOLARSHIPS.**—Founded by the late Willard Goldthwaite, of Salem.

**THE SARAH ELIZABETH PERKINS SCHOLARSHIP.**—Founded by James D. Perkins, of Brooklyn, N. Y.

**TWO LUCIUS R. PAIGE SCHOLARSHIPS.**—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

The income of five hundred dollars, given by Rev. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

# THE MEDICAL SCHOOL

## Medical Faculty\*

---

- EUMER HEWITT CAPEN, A.M., D.D., LL.D. . . . 8 Professors Row  
*PRESIDENT, and Professor of Moral Philosophy and Political Economy*
- HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston  
*DEAN and Professor of the Theory and Practice of Medicine*
- CHARLES PAINE THAYER, A.M., M.D.  
Tufts College Medical School  
*SECRETARY and Professor of General, Descriptive, and Applied Anatomy*
- HENRY WATSON DUDLEY, M.D. . . . . Abington  
*Professor of Pathology, Emeritus, and Lecturer on Legal Medicine*
- JOHN LEWIS HILDRETH, A.B., M.D., LL.D.  
*Professor of Clinical Medicine, Emeritus* 14 Garden St., Cambridge
- HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston  
*Professor of Hygiene*
- WALTER CHANNING, M.D., LL.D. . . . . Brookline  
*Professor of Mental Diseases*
- ERNEST WATSON CUSHING, A.B., M.D., LL.D.  
168 Newbury St., Boston  
*Professor of Abdominal Surgery and Gynaecology*
- EDWARD OSGOOD OTIS, A.B., M.D. . . . 381 Beacon St., Boston  
*Professor of Pulmonary Diseases and Climatology*
- CHARLES ALFRED PITKIN, A.M., Ph.D. . . . . South Braintree  
*Professor of General Chemistry*
- MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston  
*Professor of Diseases of the Nervous System*
- HENRY BECKLES CHANDLER, C.M., M.D. 34½ Beacon St., Boston  
*Professor of Ophthalmology*
- FREDERIC MELANCTHON BRIGGS, A.B., M.D.  
*Professor of Clinical Surgery* 31 Massachusetts Ave., Boston
- FREDERICK LAFAYETTE JACK, M.D. . . . 215 Beacon St., Boston  
*Professor of Otology*
- FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington  
*Professor of Materia Medica and Therapeutics*

---

\* The names of the Faculty of Medicine are arranged in three groups; Professors, Assistant Professors, and other instructors. Within each group the order is that of academic seniority.

- GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Histology*
- GEORGE HAMLIN WASHBURN, A.B., M.D.  
*Professor of Obstetrics* 377 Marlborough St., Boston
- ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road, Boston  
*Professor of Medical Chemistry and Toxicology*
- HORACE DAVID ARNOLD, A.B., M.D. . 188 Warren St., Roxbury  
*Professor of Clinical Medicine*
- TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury  
*Professor of Pathology and Bacteriology*
- HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury  
*Assistant Professor of Theory and Practice of Medicine*
- JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston  
*Assistant Professor of Dermatology*
- HOWARD SUMNER DEARING, A.M. . . 607 Tremont St., Boston  
*Assistant Professor of Clinical Medicine*
- GEORGE WARTON KANAN, M.D. . . . . Hotel Oxford, Boston  
*Assistant professor of Clinical Gynaecology*
- WILLIAM ELISHA CHENERY, M.D. . 415 Columbus Ave., Boston  
*Assistant Professor of Laryngology*
- EDMUND CHANNING STOWELL, A.B., M.D.  
 9 Massachusetts Ave., Boston  
*Assistant Professor of Children's Diseases*
- EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury  
*Demonstrator of Anatomy*
- GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.  
*Assistant Professor of Physiology* 150 St. Botolph St., Boston
- FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston  
*Assistant Professor of Ophthalmology*

### OTHER INSTRUCTORS

- GARDNER WELD ALLEN, A.B., M.D.  
 Warren Chambers, 419 Boylston St., Boston  
*Instructor in Genito-Urinary Surgery*
- EDWARD LAMBERT TWOMBLY, A.B., M.D.  
*Instructor in Clinical Medicine* 406 Massachusetts Ave., Boston
- ARTHUR PATTERSON CHADBOURN, A.B., M.D.  
*Assistant in Clinical Medicine* 225 Marlborough St., Boston
- WILLIAM EASTMAN FAY, A.B., M.D.  
*Assistant in Clinical Medicine* 366 Commonwealth Ave., Boston

CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston  
*Assistant in Clinical Medicine*

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston  
*Instructor in Otology*

JOHN JENKS THOMAS, A.M., M.D. . . 88 Bay State Road, Boston  
*Instructor in Neurology*

KARL AUGUST HOCH, M.D. . . . . McLean Hospital, Waverley  
*Instructor in Neuro-Pathology*

JOSEPH CYRUS STEDMAN, M.D.  
 Warren Chambers, 419 Boylston St., Boston  
*Instructor in Rectal Diseases*

DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston  
*Assistant in Clinical Gynaecology*

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston  
*Assistant in Clinical Gynaecology*

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston  
*Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases*

THEODORE CHARLES ERB, M.D. . . 159 St. Botolph St., Boston  
*Instructor in Obstetrics*

ARTHUR WILLARD FAIRBANKS, M.D.  
*Assistant in Clinical Medicine* 422 Massachusetts Ave., Boston

ROBERT WORTHINGTON HASTINGS, A.M., M.D.  
 Kilsyth Road, Brookline  
*Instructor in Theory and Practice of Medicine and Assistant in Pediatrics*

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury  
*Instructor in Pathology and Bacteriology*

ELMON ARTHUR BURNHAM, A.B., M.D.  
*Assistant in Clinical Medicine* 144 Huntington Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester  
*Assistant in Clinical Medicine*

EDWARD ELIPHALET THORPE, M.D. . 711 Boylston St., Boston  
*Instructor in Medical Chemistry*

WARREN FISHER GAY, A.B., M.D. . 416 Marlborough St., Boston  
*Instructor in Surgery and Assistant in Surgical Pathology*

FREDERICK WARREN PEARL, A.B., M.D.  
 Hotel Vendome, Commonwealth Ave., Boston  
*Assistant in Operative Surgery, and Assistant Demonstrator of Anatomy*



- FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston  
*Instructor in Clinical Surgery*
- H. FOWLER RAINSFORD WATTS, M.D.  
*Assistant in Clinical Medicine* 372 Dorchester Ave., Boston
- HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury  
*Instructor in Obstetrics*
- CHARLES BALFOUR DARLING, A.B., M.D.  
*Assistant in Clinical Gynaecology* 27 Rockville Park, Roxbury
- JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass.  
*Assistant in Clinical Medicine*
- CHARLES FAIRBANK PAINTER, A.B., M.D.  
*Instructor in Orthopedic Surgery* 86 Bay State Road, Boston
- WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston  
*Assistant in Clinical Gynaecology*
- JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston  
*Instructor in Materia Medica and Therapeutics, and Assistant in Clinical Medicine*
- JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury  
*Instructor in Obstetrics, and Assistant in Clinical Medicine*
- RICHARD FROTHINGHAM O'NEIL, A.B., M.D.  
416 Marlborough St., Boston  
*Demonstrator of Surgical Apparatus and Bandaging*
- ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain
- ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston  
*Instructor in Gynaecology and Abdominal Surgery*
- WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park  
*Assistant in Anatomy*
- FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston  
*Instructor in Electro-Therapeutics and Haematology*
- JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston  
*Instructor in Obstetrics*
- ELWOOD TRACY EASTON, M.D. . . . . 603 Tremont St., Boston  
*Instructor in Ophthalmology*
- THOMAS JAMES O'BRIEN, Ph.G., M.D. 1470 Tremont St., Roxbury  
*Assistant in Clinical Medicine*
- JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Howard St., Brookline  
*Assistant in Clinical Medicine*
- ADELAIDE OLGA CUSHING-LEARY, M.D.  
*Assistant in Pathology and Bacteriology* Cushing Hospital, Roxbury

HENRY STANLEY WARREN, M.D. . . . 915 Boylston St., Boston  
*Assistant in Orthopedic Surgery*

HARRY CALDWELL PARKER, M.D.  
*Instructor in Ophthalmology* . . . 382 Commonwealth Ave., Boston

ALONZO KINGMAN PAINE, M.D. . . . St. Elizabeth's Hospital  
*Prosector in Anatomy*

WILLARD CHUTE PETERS, M.D. . . . Boston City Hospital  
*Assistant in Histology*

### Laboratory Assistants

L. MARY-BELLE HOLT, B.L. . . . Portland, Me  
 HORACE G. WHEATON . . . Boston  
*Anatomy*

WILLIAM L. RIPLEY . . . Newton  
 FREEMAN A. TOWER . . . Boston  
 MARGARET E. CARLEY . . . Winthrop  
 WILLIAM D. WALKER . . . Somerville  
 HARRY W. CLARK . . . N. Woburn  
*Physiology*

THOMAS W. MURPHY . . . Lawrence  
 WILLIAM A. DUTCHER . . . Boston  
 LOUIS MODERNO . . . Cambridge  
 C. A. SULLIVAN, . . . Everett  
 ADELINE F. DUNHAM . . . Boston  
*General Chemistry*

GEORGE W. DERRICK . . . Cambridgeport  
 HORACE K. RICHARDSON, JR. . . . Medford  
*Histology*

JOHN PARR . . . Lawrence  
 WALTER W. KINGSBURY . . . Walpole  
 LUTHER G. DEARBORN, JR., A.B. . . . Somerville  
 W. H. NEWTON . . . Worcester  
*Medical Chemistry*

JOHN J. GIBBONS . . . Clinton  
*Pharmacology*

### Bursar

HERBERT T. BROWN . . . Tufts College

### STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.—The President, and Drs. Wheatley and Leary.

CATALOGUE.—Drs. Briggs and Bates.

NOMINATIONS.—Drs. Channing and Wheatley.

LIBRARY.—Drs. Channing, Otis, and Howe.

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Briggs, and Washburn.

ADMISSION.—Drs. Leary, Dearborn, and Bates.

DISPENSARY.—Drs. Briggs and Arnold.

The Dean and Secretary are members of all the above committees, *ex officio*.

# Dispensary Staff

---

## DEPARTMENT OF MEDICINE

### Chief-of-Staff

HORACE D. ARNOLD, M.D., *Professor of Clinical Medicine*

### Associate

HOWARD S. DEARING, M.D., *Assistant Professor of Clinical Medicine*

### Physicians

HENRY EHRLICH, M.D.

ANNIE S. K. PATCH, M.D.

HOWARD W. KNIGHT, M.D.

MAX C. VON GROLL, M.D.

JOSEPH H. SAUNDERS, M.D.

A. JANETTE WILSON, M.D.

HORATIO S. CARD, M.D.

## DEPARTMENT OF SURGERY

### Chief-of-Staff

FREDERIC M. BRIGGS, M.D., *Professor of Clinical Surgery*

### Surgeons

FRANCIS D. DONOGHUE, M.D. FREDERICK W. PEARL, M.D.

WILLIAM A. ROLFE, M.D.

## DEPARTMENT OF GYNAECOLOGY

### Chief-of-Staff

ERNEST W. CUSHING, M.D., *Professor of Abdominal Surgery and Gynaecology*

### Associate

GEORGE W. KAN, M.D., *Assistant Professor of Clinical Gynaecology*

### Gynaecologists

EDWARD L. TWOMBLY, M.D. ELIZABETH A. RILEY, M.D.

CHARLES B. DARLING, M.D.

## DEPARTMENT OF OPHTHALMOLOGY

### Chief-of-Staff

HENRY B. CHANDLER, M.D., *Professor of Ophthalmology*

### Associate

FRANK L. D. RUST, M.D., *Assistant Professor of Ophthalmology*

### Ophthalmologists

EDWARD L. THORPE, M.D.

ELWOOD T. EASTON, M.D.

## DEPARTMENT OF LARYNGOLOGY

### Chief-of-Staff

WILLIAM E. CHENERY, M.D., *Assistant Professor of Laryngology*

### Laryngologists

FREDERIC D. LYON, M.D.

PATRICK F. KELIHER, M.D.

## The Medical School

---

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the school to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre and a half of floor space; is heated and ventilated throughout by both the direct and indirect systems, and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

---

## Departments of Instruction

### ANATOMY

The course in anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their

•

importance in various operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

### PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the work required of the student during that period. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination will be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the class. In addition a three-hour written examination, covering the entire work of the year, is held at the completion of the work, besides subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an



adequate period it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department.

### GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3, in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the Medical Chemistry of the second year, and in the near future to have it include much of the preliminary work of that course.

### HISTOLOGY

The work in histology covers the second half of the school year, and is both didactic and practical. The practical work

in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises, conferences, and recitations will form a part of the course.

### **MATERIA MEDICA AND THERAPEUTICS**

Instruction in therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

### MEDICAL CHEMISTRY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in lectures, quizzes, and practical work in the laboratory. Every week there are three lectures and three quizzes of one hour each, besides sixteen hours required in the laboratory. The students first acquire a familiarity with proteins, carbohydrates, and fats,—the bases of food-stuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, feces, normal and abnormal. In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

### PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the period covered by the class. This work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in

autopsy technique will be given in the amphitheatre of the school.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all of the important subjects of general and special pathology. Special attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark on the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

### BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxins, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.



The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

### THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-class, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

### SURGERY

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discuss-



ions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

### OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

### PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the department for Diseases of the Lungs of the Boston Dispensary, formerly President of the American Climatological Association, has been elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the clinic of the Boston Dispensary for diseases of the lungs will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with oppor-

tunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

### **GYNAECOLOGY AND ABDOMINAL SURGERY**

Instruction is given both by lectures and clinical teaching. Lectures are given to the Junior class once a week on gynaecology, and once a week on abdominal surgery, including hernia, appendicitis, and the major operations on the female generative organs. There will also be several demonstrations of the various operations, on the cadaver.

Once a week a quiz is held on the lectures. Arrangements have been made by which the students of the Senior class may witness operations in the hospital service of the professor in charge.

### **DISEASES OF CHILDREN**

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great; examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

### **HYGIENE**

Freshmen are taught elementary hygiene, and the benefits derived from wholesome associations, during the first half of the year.

The third year, the course in hygiene includes public sanitation. Water supplies, sewerage systems, house and school construction, municipal sanitation, industrial occupations, preventable diseases, vital statistics, and sanitary codes are among the subjects of lectures and recitations. During the second half of the year, Professor Austin, in connection with the work in hygiene, will instruct the class in the chemical analysis of air, water, and foods, chiefly by means of demonstration.

One of the objects of this study is to supply qualified candidates for Public Health Offices.

### CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease.

Normal auscultation and percussion will be taught in the latter part of the second year. During the third year the work in auscultation and percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture twice a week in medical diagnosis. A course in haematology, including lectures and practical work, will be given by Dr. Strong.

During the fourth-year there will be three regular exercises weekly, besides numerous clinics. Professor Arnold will give a clinical lecture in the amphitheatre of the Boston City Hospital once a week throughout the school year. Patients from the hospital wards will be shown, and the diagnosis and treatment of these cases will be discussed. Third-year students will be admitted to this exercise. A second exercise will be held weekly at the school. These exercises will consist partly of didactic lectures supplementing the clinical lectures at the hospital, and partly of the discussion of clinical cases, in which both instructor and students take part. A number of these lectures will be devoted to the consideration of life insurance and other aspects of what may be termed mercantile medicine.

An additional series of lectures on military medicine, by As-

sistant Professor Dearing, will form part of the course in clinical medicine. The third exercise will be a clinical conference, one hour a week, under the charge of Dr. Chase. At this conference reports of cases written by the fourth-year students will be read, discussed, and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students will also be admitted to the clinical conferences.

Clinical exercises are held at the following institutions: Boston City Hospital, Carney Hospital, St. Elizabeth's Hospital, Boston Dispensary, and the Tufts College Medical School Dispensary. The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Another important feature of the instruction consists in visits made by the students with the district physicians of the Boston Dispensary. Here the students see cases of sickness in the home. They are not only instructed in the care of patients under these conditions, but have opportunities for following cases through every aspect of the disease. They will be required to make a special study of certain of these cases, and their written reports furnish much of the material for the clinical conferences.

The mark in clinical medicine is based on the practical work of the whole course: on a written report of two cases in the fourth year; on two one-hour written examinations in the third year, one in medical diagnosis and one in pulmonary diseases; and on the final three-hour written examination at the end of the fourth year.

### CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully



discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continuing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston Dispensary, at the Carney Hospital, at St. Elizabeth's Hospital, and at the School Dispensary, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have numerous opportunities of administering ether, of assisting at operations, and, with certain limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

### LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the school during the first half year. These lectures are illustrated by



colored diagrams, models, pathological specimens, and the exhibition of instruments.

Clinical instruction in laryngology and rhinoscopy is given to small sections of the class in the clinic of the School Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is given to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases that the family physician is expected to care for. Opportunity is given also to see the more important operations of the nose and throat. Practical lectures will be given at the school. The class will visit, in sections, the clinics of the School Dispensary, and also the Boston Dispensary.

### OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, the Carney Hospital, and the School Dispensary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

### NEUROLOGY

The department of neurology has been entirely reorganized during the present year, under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented by lectures by Dr. Hoch, on the anatomy, physiology, and pa-

thology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

### MENTAL DISEASES

Instruction in mental diseases will consist of a course of clinical lectures, so arranged as to cover the most important part of the subject. Last year, through the courtesy of the trustees and superintendent of the Boston Insane Hospital, many of the lectures were given in that institution, enabling the students to see the various forms of insanity at close range. A valuable clinic was held at the Massachusetts School for Feeble-Minded, where nearly all kinds of imbecility were seen and described by the superintendent. Correct methods of hospital management were also illustrated by what was being done at these institutions.

Clinics were held last year at the Boston Dispensary, and it is the intention to continue them, as far as possible according to the same methods.

### CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

### LEGAL MEDICINE

The instruction in legal medicine consists of one lecture each week for twelve weeks, and will include all the subjects which are usually embraced under the head of medical jurisprudence. Instruction will be given in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

### ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture a week at the school for the first half-year, and two exercises a week during the second half-year, at the Carney Hospital, the class being divided into sections. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative orthopedic work.

### MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. Instruction is given in the methods of physical examination, the preparation of certificates, and other allied subjects. The instruction is given by Professor Arnold and Assistant Professor Dearing, in connection with the department of clinical medicine.

### OTOLOGY

The instruction in otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary. An elective course consists of clinical work at the same institution.

### ELECTRO-THERAPEUTICS

The work in electro-therapeutics will consist of twelve lectures, with quizzes. The lectures include the exhibition of

apparatus, and explanation of the various methods of the application of electricity in disease.

### DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from October to December. Besides, from January to June, there will be three clinics weekly at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

### GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable.

### DISEASES OF THE RECTUM

Instruction in the diseases of the rectum will be given by Dr. Stedman, at the Boston Dispensary.

### NORMAL MEDICAL PSYCHOLOGY

An optional course of lectures in normal medical psychology will be given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations certain topics of great practical importance to the medical practitioner: such topics for example as suggestability and hypnosis, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. But, in addition to this, the chief value perhaps of such information, the lectures will afford a brief basis of general psychology, which will tend to make the mental phenomena of the diseases of the mind and nervous system more easily understood. The lectures will be given by Assistant Professor Dearborn.

## Requirements

### FOR ADMISSION TO FIRST-YEAR CLASS

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English : a composition of two hundred words upon some subject of general interest ; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1902 and 1903 will be chosen from the following :—

(1) Shakespeare's Merchant of Venice ; (2) Thackeray's Henry Esmond ; (3) Burke's Speech on Conciliation with America ; (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(b) Algebra : such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(c) Plane Geometry.

(d) Physics : such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(e) Latin : a sight translation of such elementary Latin as is usually included in one year of study ; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Students applying for admission to this school are advised to prepare themselves in Elementary French and German, although at the present time no entrance examination in these branches is required.

Students who fail in one or more of these subjects may be admitted, subject to condition ; but no student will be allowed



to begin his second year whose entrance conditions are not made up.

**EXCEPTIONS.**—Graduates of approved high and preparatory schools will be admitted on presentation of approved entrance certificates: also students holding certificates of entrance to a college or university, those holding the State of New York Regents' certificate, and graduates of a college or university will be admitted without entrance examination. The institutions, however, issuing certificates must be accredited as standard by the communities within which they are located.

Examinations will be held on the second Monday in June, and on the Saturday before the commencement of lectures.

Candidates who intend taking entrance examinations are required to notify the Secretary on or before Sept. 14, 1903.

### **Advanced Standing**

Students of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in anatomy, physiology, general chemistry, and histology, may be admitted to the second-year class.

No credit will be given for examinations passed at other schools.

Students from other schools who are candidates for advanced standing must present themselves for examination on Monday, Sept. 28, 1903.

### **Promotion**

Students who have passed a majority of the first-year examinations, and who have made up all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

### **The Third-Year Class**

Students who have passed all the first-year examinations, and a majority of the second-year examinations, may be admitted to the third-year class.

### The Fourth-Year Class

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

### GRADUATION

#### For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:

1. They must furnish certificates that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of medical lectures at some accredited medical college, the last of which shall have been at this school, and no two courses in the same twelve months.
3. They must have passed all the required examinations.
4. They must have attended two cases of obstetrics.
5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.
6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

### HONORS

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

## OUTLINE OF THE COURSE

### First Year

**Descriptive Anatomy.**—Lectures, demonstrations, recitations, and dissecting. *Eight hours a week during the first semester.*

**General Chemistry.**—Lectures, and required laboratory work. *Thirteen hours a week during the first semester.*

**Physiology.**—Lectures, demonstrations, conferences, recitations, and experimental work in the laboratory. *Twelve hours a week during the second semester.*

**Histology.**—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the second semester.*

**Hygiene.**—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

### Second Year

**Pathology.**—Lectures, demonstrations, and required laboratory work. *Twelve hours a week during the second semester.*

**Bacteriology.**—Lectures and required laboratory work. *Five hours a week during the second semester.*

**Materia Medica and Therapeutics.**—Lectures and recitations. *Four hours a week during the first semester.*

**Medical Chemistry and Toxicology.**—Lectures and required laboratory work. *Twelve hours a week during the first semester.*

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

**Bandaging and Apparatus.**

**Normal Auscultation and Percussion.**

### Third Year

**Theory and Practice of Medicine.**—Lectures, and recitations. *Four hours a week.*

**Surgery.**—Lectures and recitations. *Three hours a week.*

**Obstetrics,** including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

**Ophthalmology.**—*Two hours a week.*

**Abdominal Surgery and Gynaecology.**—Lectures and recitations. *Three hours a week.*

**Laryngology.**—*Two hours a week.*

**Pediatrics.**—*Six hours a week.*

**Hygiene.**—*One hour a week.*

**Auscultation and Percussion.**—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

#### Fourth Year

**Clinical Medicine, Clinical Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.**

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added Ophthalmology and Laryngology. Electro-Therapeutics and Legal Medicine cannot be taken as electives.

There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

#### EXAMINATIONS

There are two periods of examination each year in the college building. They are in writing, and are held the week before the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of medicine.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 14, 1903. Students intending to take any of the spring examinations must register their names with the Secretary, on or before May 1, 1903.

Students who have failed twice in their examination upon any subject will not be admitted to a third examination without the payment of an extra examination-fee of five dollars.

Students are eligible for their examinations as follows : those of the first year at the close of the first year's course ; those of the second year at the close of the second year's course, provided they have passed a majority of the first year examinations, and all entrance conditions ; those of the third year at the close of the third year's course, provided they have passed all of the first-year and a majority of the second-year examinations : those of the fourth year at the close of the fourth year's course, provided they have passed all of the first and second-year examinations, and a majority of those of the third year.

### TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

**Anatomy.**—Gray, Gerrish, Quain, Morris, Weisse, Holden, Haynes' Dissector.

**Physiology.**—American Text-book, Raymond, Foster, Verworn, Landois and Sterling, Porter, Chapman, Schäfer.

**General Chemistry.**—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

**Histology.**—Syllabus, Böhm and Davidoff, Stohr.

**Medical Chemistry.**—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

**Collateral Reading.**—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

**Materia Medica and Therapeutics.**—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

**Pathology.**—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.

**Bacteriology.**—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

**Obstetrics.**—Hirst, Reynolds, Jewett, American Text-book.

**Gynaecology.**—Greig-Smith, Byford, Dudley, Kelly, Reed.

**Clinical Gynaecology.**—Davenport, Dudley, Greig-Smith.

**Surgery.**—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.



**Clinical and Operative Surgery.**—International Text-book, Roswell Park. American Text-book, Wharton and Curtis, Roberts, Bryant's Operative Surgery, Zuckerkandyl's Operative Surgery, Da Costa.

**Practice of Medicine.**—Osler, Tyson, Thompson, Strümpell, Eichhorst, Ander's Practice of Medicine.

**Dermatology.**—Diseases of the Skin by Hyde and Montgomery, During, Stelwagon, Crocker, Kaposi, Besmer.

**Hygiene.**—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

**Clinical Medicine.**—Osler's Practice of Medicine, Wood and Fitz's Practice, Da Costa's Medical Diagnosis, Tyson's Physical Diagnosis.

**Neurology.**—Church and Peterson, Gower, Dana, Dercum.

**Mental Diseases.**—Chapin, Clouston, Peterson, Lewis, Dictionary of Psychological Medicine.

**Pediatrics.**—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

**Laryngology.**—Bosworth, Shurley, Hall, Coakley and Ballinger on Diseases of the Nose and Throat.

**Diseases of the Rectum.**—Kelsey's Surgery of the Rectum and Pelvis.

**Orthopedics.**—Bradford and Lovett, last edition.

**Otology.**—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

**Ophthalmology.**—De Schweinitz, Nettleship, Noyes.

**Medical Dictionary.**—Gould, Dunglison.

### EXPENSES

#### First Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00
Dissecting . . . . .	At cost

#### Second Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00
Dissecting . . . . .	At cost.

#### Third Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

Fourth Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	90.00
Graduation fee . . . . .	30.00
Postgraduate fee for graduates of other schools . . . . .	120.00
Single course . . . . .	30.00
Postgraduate fee for graduates of this school . . . . .	60.00
Single course . . . . .	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees and charges of every kind are settled.

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

## General Information

### CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to

students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Boston Dispensary, the Carney Hospital, the Tremont Dispensary, the Cambridge Hospital, the Free Home for Consumptives, the Free Hospital for Women, the Women's Charity Hospital, St. Mary's, the Good Samaritan, and the Dispensary of the Medical School, in which over eight thousand visits were made in the year 1901-02.

### LIBRARIES

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than fifteen thousand books upon medical subjects.

### SESSIONS OF THE SCHOOL

The annual course of lectures, after the session of 1902-03, begins on the first Tuesday in October of each year, and continues until the last Wednesday in May.

The annual course of lectures for 1902-03 will commence Wednesday, October 1, 1902.

### VACATIONS

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

### Summer Courses

The following laboratory subjects are offered during the summer months:—

### PHYSIOLOGY

A course in Physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and reci-

tations adequate to the outlines and basal principles of physiology. The fee for this class will be twenty dollars.

### MEDICAL CHEMISTRY

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advanced work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

### HISTOLOGY

A summer course in Histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

### STANDING AND CERTIFICATES

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who intend entering the school are required to write for an application-blank, and forward it to the Secretary.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the school.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week.

Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city not approved by the Faculty.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled. *All students must fill out and deposit a registration blank before October 16.*

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Medical School, Boston, Mass.



# THE DENTAL SCHOOL

## Faculty of the Dental School\*

---

- ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . 8 Professors Row  
*PRESIDENT, and Professor of Moral Philosophy and Political Economy*
- HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston  
*DEAN, and Professor of the Theory and Practice of Medicine*
- CHARLES PAINE THAYER, A.M., M.D.  
Tufts College Medical School  
*SECRETARY, and Professor of General, Descriptive, and Applied*  
*Anatomy*
- HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston  
*Professor of Hygiene*
- CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree  
*Professor of General Chemistry*
- SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.  
235 Marlborough St., Boston  
*Professor of the Theory and Practice of Dentistry*
- EDWARD WALTER BRANIGAN, D.D.S.  
*Professor of Clinical Dentistry* 2 Commonwealth Ave., Boston
- FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington  
*Professor of Materia Medica and Therapeutics*
- JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park  
*Professor of Prosthodontia*
- GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Dental Histology*
- JOHN CUMMINGS MUNRO, A.B., M.D. . . . 173 Beacon St., Boston  
*Professor of Oral Surgery*
- FREDERICK MORTIMER HEMENWAY, D.D.S.  
*Professor of Prosthetic Dentistry* 88 Boylston St., Boston
- TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury  
*Professor of Pathology and Bacteriology*
- EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury  
*Demonstrator of Anatomy*
- GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.  
*Assistant Professor of Physiology* 150 St. Botolph St., Boston

---

\* The names of the Dental Faculty are arranged in three groups: Professors, Assistant Professors, and other instructors. Within each group the order is that of academic seniority.

## OTHER INSTRUCTORS

- EDGAR OSGOOD KINSMAN, D.D.S. . . . 15 Brattle Sq., Cambridge  
*Instructor in Clinical Dentistry*
- BYRON HOWARD STROUT, D.D.S. . . . . Taunton  
*Lecturer on Operative Technics and Instructor in Anaesthesia*
- WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham  
*Lecturer on Operative Dentistry*
- GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville  
*Instructor in Prosthetic Dentistry*
- FRED CARVILL MERRILL, D.D.S. . . . . Wollaston  
*Instructor in Prosthetic Dentistry*
- WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- WILLIAM PRESTON HOUSTON, D.D.S. . . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- HENRY HILDRETH PIPER, D.D.S. . . . . Winter Hill, Somerville  
*Instructor in Clinical Dentistry*
- KNUT JOSEPH LUTTROPP, D.D.S. . . . 419 Boylston St., Boston  
*Demonstrator in Operative Dentistry*
- JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury  
*Instructor in Pathology and Bacteriology*
- FREDERIC W. PEARL, A.B., M.D.  
Hotel Vendome, Commonwealth Ave., Boston  
*Assistant Demonstrator of Anatomy*
- BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham  
*Instructor in Clinical Dentistry*
- JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston  
*Instructor in Materia Medica and Therapeutics, and Assistant in Clinical Medicine*
- ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston  
*Instructor in Clinical Dentistry*
- ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain
- FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park  
*Instructor in Clinical Dentistry*

WALTER FORSYTHE WINCHESTER, D.D.S.

*Instructor in Prosthetic Dentistry*

372 Boylston St., Boston

ADELAIDE OLGA CUSHING-LEARY, M.D.

*Assistant in Pathology and Bacteriology* Cushing Hospital, Roxbury

### Administrative Committee of the Dental School

The PRESIDENT, the DEAN, the SECRETARY, and DRs. BRANIGAN and BATES

### LABORATORY ASSISTANTS

#### Anatomy

L. MARY-BELLE HOLT, B.L. . . . . Portland, Me.

HORACE G. WHEATON . . . . . Boston

#### Physiology

WILLIAM L. RIPLEY . . . . . Newton

FREEMAN A. TOWER . . . . . Boston

MARGARET E. CARLEY . . . . . Winthrop

WILLIAM D. WALKER . . . . . Somerville

HARRY W. CLARK . . . . . N. Woburn

#### Histology

GEORGE W. DERRICK . . . . . Cambridge

HORACE K. RICHARDSON, JR. . . . . Medford

#### Pharmacology

JOHN J. GIBBONS . . . . . Clinton

### OTHER OFFICERS

HERBERT T. BROWN . . . . . Tufts College

*Bursar*

MARY WRIGHT RICHARDSON

*Clerk in Infirmary*

SARAH ELIZABETH MILLER

*Clerk in the Prosthetic Department*

FRANCES WILDER

*Matron in the Operating-Room*

## The Dental School

---

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces four academic years of nine months each. The studies of the first year, and a portion of those of the second year, are identical with those of the Medical School. Instruction is given by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, *materia medica*, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory



specimens of the different forms of mechanical work made by himself in the laboratory of the school, and under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has always been to give its students such a training as will not only insure to them the knowledge necessary to equip them for the practical part of the dentist's work, but also inspire in them a respect for the dignity of the profession which they seek to enter.

It is believed that the dentist is not over-educated who is possessed of a working knowledge of the fundamental elements of the science of medicine. Such knowledge can but inspire him with more profound respect for his own branch of study, which stands so closely related to the mother science. But, while the School seeks to keep constantly before the student the need for a proper appreciation of the character and standing of his professional relations, no pains are spared to give abundant instruction in all the elements which pertain to the subject that are needed to graduate well-trained, practical dentists.

Attention is therefore called to the fact that the student, during three entire years of his course, is under the supervision of a professor and his demonstrators, who are in daily attendance at the infirmary.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all con-

nected with the school are urged to avail themselves of the facilities thus offered.

### THE NEW BUILDING

Owing to the rapid growth of the Medical and Dental departments of the College, it was found necessary to provide increased laboratory facilities. Accordingly, in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. The new building is now completed and occupied. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It was designed by Mr. J. Philip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among the best equipped and the most complete dental infirmaries in this country. The prosthetic department which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The building may be reached by any Huntington avenue car with the exception of those of the Cross Town and Cambridge Lines.

## Course of Instruction

---

### ANATOMY

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in anatomy will consist of lectures, recitations, and practical work in the dissecting room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

### CHEMISTRY

The work in chemistry is divided into two parts. During the first half of the first year it is the same as is given to the students of the Medical School. There are five lectures and two recitations each week, with six hours or more of work in the laboratory, including descriptive chemistry, qualitative analysis, and so much of theoretical chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference is made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. This part of the work will be much extended in the near future, the high importance of chemistry to the dental profession being fully recognized.

### PHYSIOLOGY

The instruction in physiology is given throughout the latter half of the first year, it being half of the student's work during that period. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination will be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the department. In addition, a three-hour written examination, covering the entire work of the year, is held at its completion, besides subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department.

### HISTOLOGY

The subject of histology covers the second half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the work covers the study of the elementary tissues, treated comprehensively, beginning with their origin in



the embryo. Dental histology will be taught during the second year. Particular attention will be given, in this department, to the study of the minute anatomy of the tooth. The development of the teeth will receive careful treatment. A training which promises knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

### HYGIENE

Freshmen of the Dental and the Medical Schools are jointly taught elementary hygiene during the first half of the year.

In the absence of home influences, the benefits derived from pure associates, and from wholesome surroundings, are considered of paramount importance. Rational physical exercise, bathing, clothing, air, water, and foods; the transmissible diseases and their mode of transmission, are other topics of the lectures on hygiene.

### OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the minds of the students. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.



### DENTAL TECHNICS

A well lighted and convenient room has recently been fitted for the use of the class in operative technics. Instruction will be given in this department, both by lectures from the instructor in charge, illustrated by models and lantern slides, and by practical work on the part of the student. The practical work will include the study of the forms of teeth, with carvings in ivory, study of the position and form of pulp chambers and canals, with dissection of teeth, proper methods of opening and filling pulp canals, and operations on natural teeth: also proper methods of forming cavities for filling, and the manipulation of filling materials. \*

### CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

### PROSTHODONTIA

The course of instruction in prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures with a special course to the second-year class in making and tempering instruments. Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures: to gold-plate work and the application of continuous gum to platina: to the manufacture of porcelain teeth in single and block forms: and to crown and bridge work. The natural form, color, and arrangement of the

\*NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

### ORTHODONTIA

The most important part of the course in orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

### MATERIA MEDICA AND THERAPEUTICS

Instruction concerning *materia medica* and therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class, in sections, is taught by practice. Prescription writing, and the metric system, will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

### PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given special attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria,

will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures, and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the school occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

#### **THEORY AND PRACTICE OF DENTISTRY**

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

#### **THEORY AND PRACTICE OF MEDICINE**

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and board of instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsillitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the

utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

### ORAL SURGERY

It is the intention of this department not only to afford instruction in local affections which are found in the tissues about the oral cavity, but also to acquaint the student with such subjects in general surgery as have even remote connection with oral and dental surgery. The lectures are supplemented by frequent clinics, both at the infirmary and at the hospital. The use of anaesthetics is exemplified in the weekly clinics for extraction, and in the hospital service of the Professor of Surgery.

### ANAESTHESIA AND EXTRACTION

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth, and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

### CLINICAL CONFERENCE

Each clinical conference consists in the reading of the written report of an actual case by a student of the Senior class, at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

# Requirements

## FOR ADMISSION

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1902–1903 will be chosen from the following :—(1) Shakespeare's *Merchant of Venice*; (2) Thackeray's *Henry Esmond*; (3) Burke's *Speech on Conciliation with America*, (4) Scott's *Ivanhoe*. Every candidate is expected to have read intelligently all the books prescribed.

(b) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(c) Plane Geometry.

(d) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(e) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's *Commentaries*; also the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions: Graduates of high and preparatory schools will be admitted on presentation of approved entrance certificates; also students holding certificates of entrance to a college or university, those holding the Regents' certificate of the State of



New York, and graduates of a college or university will be admitted without examination. The institutions, however, issuing certificates must be accredited as standard by the community within which they are located.

### FOR ADVANCED STANDING

Students who have taken courses in other accredited Dental Schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

### FOR PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class; but no student will be promoted to the fourth-year class who has not passed all the first and second-year examinations, and a majority of those of the third year.

The Faculty reserve the right to change these requirements from time to time without further notice.

### FOR GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following requirements:—

1. They must present a certificate that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of lectures in some accredited Dental School, the last of which shall have been at this School, and no two courses in the same twelve months. An exception is made of those already in the School who are pursuing the three years' course.
3. They must have passed all the examinations required, and have satisfied the professors of Operative and Prosthetic Dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, pre-

pared during the course under the supervision of the Prosthetic department.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees before the final examinations.

### EXAMINATIONS

There are two periods of examination held each year in the School building. They are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of dentistry.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examinations will be held at 10 A.M. on Monday, June 8, 1903, and on Saturday, Oct. 3, 1903.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in their examinations upon a subject will not be admitted to a third examination without the payment of an extra fee of five dollars.

### DIVISION OF STUDIES

**First Year.** Anatomy, Histology, Embryology, Physiology, General Chemistry, Qualitative Analysis, Personal Hygiene.

**Second Year.** Morning hours at the Dental School Infirmary, Prosthetic Laboratory, and Operative Technic Department.

Afternoons: Materia Medica and Therapeutics, Dental Chemistry, Dental Histology, Operative Dentistry, Prosthetic Dentistry, Normal Auscultation and Percussion.

**Third Year.** Morning hours at the Dental School Infirmary and the Prosthetic Laboratory.

Afternoons: Prosthetic Dentistry, Operative Dentistry and Clinic, Orthodontia, Hygiene, Surgery, Pathology, and Bacteriology.

**Fourth Year.** Morning hours at the Dental School Infirmary, and Prosthetic Laboratory, including practical anaesthesia and extraction: Clinical Surgery at the Hospital.

Afternoons: Operative Dentistry, Prosthetic Dentistry, Orthodontia, Crown and Bridge Work, Theory and Practice of Dental Medicine, Clinical Conferences in Operative and Prosthetic Dentistry.

### TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

**Anatomy.**—Gray, Cryer's Internal Anatomy of the Face, Weisse, Quain, Morris, Black's Dental Anatomy.

**Physiology.**—American Text Book, Foster, Raymond, Schäfer, Porter, Verworn.

**Chemistry.**—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

**Dental Histology and Microscopy.**—Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition).

**Pathology.**—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

**Hygiene.**—Egbert's Hygiene and Sanitation.

**Materia Medica.**—Shoemaker (4th edition), Bruce, White, Bartholow (8th edition).

**Therapeutics.**—Cushing, Bartholow, Wood, Hare, United States Dispensary, Gerrish's Prescription Writing.

**Practice of Surgery.**—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

**Dental Science and Operative Dentistry.**—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

**Prosthetic Dentistry.**—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

**Bacteriology.**—Abbott, Woodhead, Sternberg.

**Medical Dictionary.**—Dunglison.

### EXPENSES

#### First Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

#### Second Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

Third Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

Fourth Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	90.00
Graduation Fee . . . . .	30.00
Postgraduate fee for graduates of other schools . . . . .	120.00
Single course . . . . .	30.00
Postgraduate fee for graduates of this school . . . . .	60.00
Single course . . . . .	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the purpose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

## General Information

This School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

*All students must be registered and in attendance within ten days after the commencement of lectures.*

### SESSIONS

The annual course of lectures, after the session of 1902-03, begins on the first Tuesday in October of each year, and continues until the last Wednesday in May. The session of 1903-04 will commence Tuesday, October 6.

### VACATIONS

There are no exercises at the School during three days at Thanksgiving, and the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

### APPLICATIONS

Students intending joining the School for the first time may obtain from the Secretary an application blank, which they are required to fill out and return to the Secretary.

### REGISTRATION

The registration is required of all students, yearly. Properly filled entrance blanks for the year of 1903-04 must be deposited with the Secretary before October 16.

### ENTRANCE EXAMINATIONS

For the session of 1903-04 the entrance examinations will be held at the School on Monday, June 8th, 1903, and Saturday, October 3, 1903. Students conditioned in entrance requirements must remove their conditions upon those dates.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.



THE  
BROMFIELD-PEARSON  
SCHOOL

# The Bromfield-Pearson School

## BOARD OF INSTRUCTION

ELMER H. CAPEN, D.D., PRESIDENT

GARDNER C. ANTHONY, A.M., DEAN

SAMUEL C. EARLE, A.M.

*Assistant Professor of English*

GEORGE FRANCIS ASHLEY

*Instructor in Drawing*

LESLIE C. WELLS, A.M.

*Instructor in French*

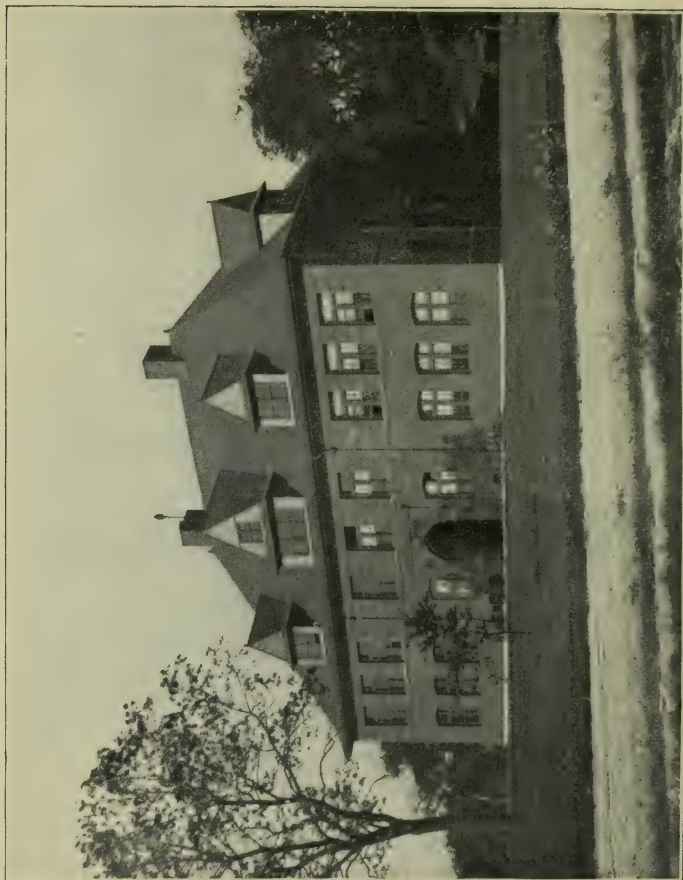
CHARLES E. STEWART, S.B.

*Instructor in Shopwork*

MARTIN L. KIDDER

*Assistant in Mathematics*

THE  
JOHN CRERAR  
LIBRARY.



BROMFIELD-PEARSON SCHOOL

## The Bromfield-Pearson School

---

The Bromfield-Pearson School is designed to meet the wants of young men whose preparation for engineering studies may be deficient in some of the required branches, but whose practice and experience in the applied part of engineering may qualify them to pursue some of the regular subjects while making up their deficiencies.

Thus a student may review all of academic algebra, or geometry, in one year, while pursuing college work in the subjects for which he may be prepared. Elementary instruction in French and English is given in the same manner, an arrangement which enables young men of mature mind and industrious habits to do the work required in a fitting school while anticipating much of the college course. Students who have already acquired a trade will save many hours required for work in the college course, and in most cases they profit much from their experience, in the keener appreciation of engineering studies. The Bromfield-Pearson School is not intended for those who should attend the regular high school or manual training course, but is designed to make the college course possible to many who have been deprived of these opportunities and cannot afford the time ordinarily required in a fitting school.

A two-years' course of study is provided. The first year may be taken as preparatory, either to the Engineering Department of the College, or to the technical course of the School. The course for the second year is arranged to meet the wants of those who are unable to continue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes elementary mathematics, mechanics, and technical drafting.

The Bromfield-Pearson Building is a three-story building



one hundred by fifty feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the school, and the department of drawing and shop work in the College. One room is set apart as a study for such of the students as do not room at the College. For a fuller description of the building see page 151

## Course of Study

### FIRST YEAR

#### Preparatory Course

**Algebra** (Academic) will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

**Geometry.** The work comprises plane geometry and all of solid geometry, including spherical.

**Plane Trigonometry** may be taken during the fourth quarter.

**English Grammar and Composition** is pursued throughout the year.

**French** for the entire year is required of those who are preparing for a college course.

**Drawing** (Freehand) comprises the work required for entrance to the College, together with a course in Technical Sketching.

**Drawing** (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the work in Freehand Drawing are identical with the college work in the same subjects, and all, or a part of these, may be omitted by students fitting for college.

**Descriptive Geometry** may be taken by such students as are sufficiently prepared to enter the college class. This subject is pursued during the second term, and is required of those taking the two-years' course.

#### Electives

Those who are sufficiently prepared in any of the studies named above may elect more advanced subjects, as follows:—

Preparation in elementary algebra, as indicated above, will admit to the course in COLLEGE ALGEBRA.

Preparation in elementary algebra, together with plane and solid geometry, will admit to FRESHMAN MATHEMATICS.

As the instruction in DRAWING is largely individual, the student may take the grade for which he is prepared.

SHOPWORK may be taken at any time when it will not interfere with required work.

PHYSICS. (See page 80.)

## SECOND YEAR

### Special Engineering Course

The Second Year is intended only for those who do not enter the Engineering Department of the College. Students will be admitted to college classes for which they may be fitted.

**Advanced Algebra and Trigonometry** are pursued with the college classes during the first term

**Analytical Geometry** is taken during the second term.

**Calculus.** A special course is given during the second term. This subject is elementary, and is designed to give the student such a knowledge of the practical use of the Calculus as shall enable him to read, in an intelligent manner, books involving its use.

**Mechanics** involves the use of an elementary treatise, including the subject of Graphic Statics.

**Machine Drawing.** The work in Machine Drawing is conducted as in a well-organized drafting-room. It consists largely of freehand sketches and plainly finished drawings, made according to approved systems.

**Mechanism.** Under the head of Mechanism, cams, gearing, links, and other mechanical motions are treated, and much stress is laid on the practical application of principles.

**Machine Design** is begun as soon as the student has become proficient in the preceding subjects, and has acquired neatness, accuracy, and rapidity of execution.

**Steam Engine.** A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of VALVE GEARS is considered at this time. The student is also taught to apply the INDICATOR, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

**Moulding.** A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns.

## ELECTIVES

The following subjects may be pursued in connection with the foregoing, when time and previous preparation will permit :—

**Pattern Making.** The work in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding.

**Forging.** In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, upsetting, welding, tempering, and case-hardening.

**Machine Work.** Vise work in iron includes surface chipping, squaring and fitting, key-seating, scraping, and polishing. The machine practice consists not only in turning, planing, drilling, boring, and milling operations, but in the careful study of the machines, their efficiency, and capabilities.

**Physics.** (See page 80).

**Chemistry.** Instruction in Chemistry is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, cover the ground of theoretical and descriptive inorganic chemistry. Students are charged for breakage, and four dollars a term for materials used.

---

## General Information

### REQUIREMENTS FOR ADMISSION

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they may elect. This may be done by certificate from a school previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

### REGULATIONS OF THE SCHOOL

Students are subject to the rules governing students of the College.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon. Any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular college courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Certificates of proficiency are given the special Engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given, or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before the 15th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in private families at \$3.50 to \$5.00 for table board, and \$1.50 to \$2.00 for furnished room. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses: —

Tuition . . . . .	\$120.00	\$120.00
Half-room rent . . . . .	15.00	75.00
Board, \$3.50 to \$4.50 a week (36 weeks) . .	126.00	162.00
Physical training . . . . .		10.00
Books, instruments, and supplies . . . . .	15.00	25.00
Total . . . . .	\$276.00	\$392.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.





# THE SUMMER SCHOOLS

# The Summer Schools

---

## THE SUMMER SCHOOL AT TUFTS COLLEGE

### Instructors

FRANK G. WREN, A.M.

*Professor of Mathematics*

LAWRENCE B. EVANS, PH.D.

*Professor of History*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English*

## THE HARPSWELL LABORATORY

### Instructors

J. STERLING KINGSLEY, S.D.

*Director, and Professor of Biology*

FRED D. LAMBERT, PH.D.

*Assistant, and Instructor in Natural History*

## **The Summer Schools**

---

### **THE SUMMER SCHOOL AT TUFTS COLLEGE**

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In the summer of 1900, classes in Mathematics and English were added. History was taught in 1902.

In 1902, instruction in History covered the subjects, History 1, 2, and 3 (see pages 74 and 75). Instruction was also given in English composition, in Literature equivalent to English 13, 15, and 18 (see pages 59, 60), and in Oratory 1, (see page 61). When satisfactorily completed, the work done in the Summer School can be counted toward a degree.

Board and furnished rooms can be obtained for six dollars a week, or board alone for three dollars and a half a week.

The tuition ordinarily is twenty dollars for each subject pursued. For a list of students in the Summer School at the College in the summer of 1902, see Register of Students.

All inquiries concerning the Summer School should be addressed to Professor H. G. CHASE, SECRETARY, Tufts College, Mass.

### **THE HARPSWELL LABORATORY**

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1903 from June 22 until the middle of September. Instruction will be given in zoology,

botany, and beginning research. Instruction will commence July 1, and will continue six weeks. For each subject a fee of twenty dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms, and a few tables in the large laboratory, for research students, the fees for these being fifteen and ten dollars, respectively, for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses where board and rooms may be had, at five dollars a week and upward.

For a list of the students in the Harpswell Laboratory, during the summer of 1902, see the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

# REGISTER OF STUDENTS



## Graduate Department

---

### Fellows

GOODENOW, VALERIA STONE	West Newton	16 Regent St.
<i>A.B., Vassar, 1901 Miner Fellow in Natural History First Year Biology.</i>		
RUDDICK, WILLIAM HENDERSON	East Boston	502 East Broadway
<i>M.D., Harvard, 1868 B.A.S., Harvard, 1881 Fellow by courtesy in Natural History Biology</i>		
THYNG, FRED WILBUR	Ross Corner, Me.	12 Emery St.
<i>A.B., Colby, 1902 Olmstead Fellow in Natural History First Year Biology.</i>		

### Resident Students

HAPGOOD, ERNEST GRANGER	West Newbury	
<i>A.B., 1901 First Year Economics and Sociology</i>		
LUNT, FORREST SUMNER	Somerville	89 Monroe St.
<i>A.B., 1902 First Year History and Public Law</i>		
TARBOX, CARL CLIFTON	Tufts College	
<i>A.B., 1900 First Year English</i>		
TITUS, MARIAN LUCY	Tufts College	10 Raymond Ave
<i>A.B., 1902 First Year English</i>		

### Undergraduate Students

(doing advanced work as candidates for a higher degree)

MARY WINSHIP KINGSLEY . . . . .	128 Professors Row
<i>History and Economics</i>	
ETHEL FRANCES LITTLEFIELD . . . . .	Allen House
<i>Greek</i>	
LAWRENCE MARSDEN PRICE . . . . .	Δ T House
<i>History and Public Law</i>	
CHANDLER MASON WOOD . . . . .	Dean Hall, 5
<i>History and Public Law</i>	

## Courses in Arts and Sciences

---

[In the following list the course pursued by each student is indicated by the italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *che*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in chemistry, *ch*; and Medical Preparatory, *mp*.]

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.

### Senior Class

Bruce, Blanche Louise	<i>ab</i>	<i>West Somerville</i>	120 Curtis St.
Bursch, Clare Louise	<i>ph</i>	<i>Hyde Park</i>	Metcalf Hall, 12
Bush, Edith Linwood	<i>ab</i>	<i>Chelsea</i>	Metcalf Hall, 4
Cannell, Winburn Scott	<i>ab</i>	<i>Bridgton, Me.</i>	85 Jenny Lind Ave.
Coolidge, Arthur William	<i>ab</i>	<i>Portland, Me.</i>	Θ Δ X House
Coombs, Isabel Hall	<i>ab</i>	<i>Stoneham</i>	Metcalf Hall, 1
Cooper, Ashton Bardolph	<i>ee</i>	<i>Bloomfield, Ont.</i>	Z Ψ House
Crowell, Hannah	<i>ab</i>	<i>Woods Hole</i>	Metcalf Hall, 13
Dame, Olive Arnold	<i>ab</i>	<i>Medford</i>	Hastings Lane
Farnsworth, Louise Melinda	<i>ab</i>	<i>Natick</i>	Metcalf Hall, 3
Fisher, Gertrude Isabelle	<i>ab</i>	<i>Fitchburg</i>	Metcalf Hall, 5
Fox, Carrie Edwards	<i>ab</i>	<i>W. Somerville</i>	123 College Ave.
Friend, Edna Mary	<i>ab</i>	<i>W. Somerville</i>	33 Wallace St.
Gibbs, Julia Frances	<i>ab</i>	<i>Waltham</i>	51 Harris St.
Hall, Samuel Thomas	<i>ee</i>	<i>Newton Highlands</i>	
Hayden, Philip Meserve	<i>ab</i>	<i>Augusta, Me.</i>	Δ T House
Hersey, Harry Adams	<i>ab</i>	<i>Dorchester</i>	West Hall, 3
Hixon, Beulah Sinclair	<i>ab</i>	<i>Chelsea</i>	Metcalf Hall, 16
Kingsley, Mary Winship	<i>ab</i>	<i>Tufts College</i>	128 Professors Row
Knight, Thomas Sawyer	<i>ee</i>	<i>Tufts College</i>	114 Professors Row
Lauriat, Leonard	<i>ee</i>	<i>Medford</i>	8 Oakland St.
Lewis, Henry Palmer	<i>ph</i>	<i>Randolph, Vt.</i>	West Hall, 2
Linscott, Harry DeLuce	<i>ph</i>	<i>North Woburn</i>	East Hall, 4
Littlefield, Ethel Frances	<i>ab</i>	<i>Braintree</i>	Allen House
Lowell, Charlotte Raymond	<i>ab</i>	<i>Somerville</i>	37 Harvard St.
Lyons, Lena Abbie	<i>ab</i>	<i>Bradford</i>	Metcalf Hall, 3
Marion, Guy Elwood	<i>ab</i>	<i>Woburn</i>	A T Ω House
Merritt, Harry Tirrell	<i>ph</i>	<i>South Weymouth</i>	East Hall, 4

Moore, Ethel Almira	<i>ab</i>	<i>Somerville</i>	37 <i>Madison St.</i>
Moulton, Oren McKenney	<i>ce</i>	<i>So. Gorham, Me.</i>	15 <i>Curtis Ave.</i>
Murphy, Arthur, Jr.	<i>ch</i>	<i>Wollaston</i>	<b>Z Ψ</b> House
Nason, Robert Edward	<i>ab</i>	<i>Jamaica Plain</i>	<b>Θ Δ X</b> House
Page, Harry Stanley	<i>ee</i>	<i>No. Woburn</i>	East Hall, 22
Preble, Alfred Emerson	<i>bi</i>	<i>Wilmington</i>	East Hall, 22
Price, Lawrence Marsden	<i>ab</i>	<i>Cambridge</i>	<b>Δ T</b> House
Puffer, Ethel Winnifred	<i>ab</i>	<i>Tufts College</i>	Start House
Ryan, Olive Katherine	<i>ab</i>	<i>Waltham</i>	274 <i>School St.</i>
Spear, Stanley Gates, B.D.	<i>ab</i>	<i>Somerville</i>	28 <i>Appleton St.</i>
Story, Chester Bradstreet	<i>ph</i>	<i>Uxbridge</i>	West Hall, 2
Towle, Walter Volney	<i>ph</i>	<i>New York City</i>	<b>Δ T Δ</b> House
Wood, Chandler Mason	<i>ab</i>	<i>Fort Plain, N. Y.</i>	Dean Hall, 5

## Junior Class

d'Amaral, Joseph	<i>ee</i>	<i>Azores Islands</i>	East Hall, 15
Barnett, Stella May	<i>ab</i>	<i>North Attleboro</i>	Metcalf Hall, 11
Bartlett, Daisy Mae	<i>ab</i>	<i>Somerville</i>	47 <i>Madison St.</i>
Bearce, Clarence Prescott	<i>ch</i>	<i>Medford</i>	<b>Θ Δ X</b> House
Berry, Charles Franklin, Jr.	<i>ab</i>	<i>Mattapan</i>	West Hall, 23
Bond, Alfred Moore	<i>ce</i>	<i>Hudson</i>	Dean Hall, 5
Bray, Bertha	<i>ab</i>	<i>Tufts College</i>	98 Professors Row
Bray, Compton Durlin	<i>ab</i>	<i>Tufts College</i>	98 Professors Row
Burnell, William Victor	<i>ce</i>	<i>Medford Hillside</i>	West Hall, 18
Chism, James Whiton	<i>ee</i>	<i>Westford, Conn.</i>	East Hall, 3
Clark, Alice Wellington	<i>ab</i>	<i>Waltham</i>	Start House, 4
Clark, Georgiana	<i>ab</i>	<i>Somerville</i>	60 <i>Central St.</i>
Clifford, John William	<i>ab</i>	<i>Naugutuck, Conn.</i>	28 Professors Row
Countway, Gussanda	<i>ab</i>	<i>Somerville</i>	28 <i>Robinson St.</i>
Creeley, Oscar Slade	<i>mp</i>	<i>Belmont</i>	
Crowell, Mertie	<i>ab</i>	<i>Woods Hole</i>	Metcalf Hall, 13
Cummings, Alice Josephine	<i>ab</i>	<i>Medford</i>	209 <i>Main St.</i>
Curtis, Helen Clare	<i>ab</i>	<i>Addison, Me.</i>	Start House, 7
Cushing, Mary Magdalen	<i>ph</i>	<i>Boston</i>	168 <i>Newbury St.</i>
Draper, Ernest Sparrell	<i>ce</i>	<i>Wayland</i>	East Hall, 30
Druley, Elmer Morey	<i>ph</i>	<i>Belpie, O.</i>	<b>Δ T</b> House
Ellis, Arthur Eugene	<i>ch</i>	<i>Somerville</i>	West Hall, 7
Fay, Harold	<i>ab</i>	<i>Tufts College</i>	West Hall, 21
Fleming, Patrick William	<i>ee</i>	<i>Thorndike.</i>	West Hall, 14
Forrest, Oscar Edmund	<i>ce</i>	<i>Medford</i>	<b>Δ T</b> House
Frossard, Helen Amelia	<i>ab</i>	<i>East Pepperell</i>	Metcalf Hall, 8
Harmon, Betsy Barker	<i>ab</i>	<i>Adams</i>	Metcalf Hall, 2
Hazeltine, William Everett	<i>ce</i>	<i>Lynn</i>	East Hall, 30
Hennelly, Thomas Patrick	<i>ab</i>	<i>Waltham</i>	Dean Hall, 7

Hill, Robert William	<i>ab</i>	<i>Salem</i>	West Hall, 6
Hill, Sherburne	<i>ce</i>	<i>Methuen</i>	$\Delta$ T House
Hood, James Henry	<i>ce</i>	<i>Franklin</i>	A T $\Omega$ House
Hooper, Blanche Heard	<i>ab</i>	<i>Tufts College</i>	124 Professors Row
Kennard, William Oliver	<i>ee</i>	<i>Somerville</i>	21 <i>Wheeler St.</i>
Kimball, Ralph Elmore	<i>ce</i>	<i>Lynn</i>	Z $\Psi$ House
Lowe, George Albert, Jr.	<i>ce</i>	<i>Rockport</i>	A T $\Omega$ House
McAllister, Florence Lillian	<i>ab</i>	<i>W. Somerville</i>	23 <i>Wallace St.</i>
McMahon, Charles Edward	<i>ab</i>	<i>Randolph</i>	West Hall, 10
Marr, Myron Whitmore	<i>mp</i>	<i>Dorchester</i>	West Hall, 18
Mason, Joseph Eaton	<i>ab</i>	<i>Chicago, Ill.</i>	Z $\Psi$ House
Maxwell, Leon Ryder	<i>ab</i>	<i>Medford</i>	$\Delta$ T House
Mayhew, Alfred Boardman	<i>ce</i>	<i>Shelburne Falls</i>	East Hall, 2
Moore, Fred Atkins	<i>ab</i>	<i>Somerville</i>	10 <i>Grant St.</i>
Morley, Raymond Kurtz	<i>ab</i>	<i>Newton Centre</i>	East Hall, 19
Munro, Melville Smith	<i>ee</i>	<i>Medford</i>	59 <i>George St.</i>
Newell, Lewis Winslow	<i>ab</i>	<i>Salem</i>	East Hall, 24
Norcross, Theodore White	<i>ce</i>	<i>Medford</i>	$\Delta$ T House
Parker, Clara Elizabeth	<i>ab</i>	<i>Middleboro</i>	Metcalf Hall, 9
Parker, Jessie Merrill	<i>ab</i>	<i>Uxbridge</i>	Start House, 3
Pearson, George Edward	<i>ab</i>	<i>W. Somerville</i>	325 <i>Highland Ave.</i>
Peirce, Arthur Cyrus	<i>ce</i>	<i>Athol</i>	Dean Hall, 7
Perkins, Henry Farnsworth	<i>me</i>	<i>Haverhill</i>	$\Delta$ T House
Phillips, Ethel May	<i>ab</i>	<i>W. Somerville</i>	1088 <i>Broadway</i>
Preston, Mertie Belle	<i>ab</i>	<i>Somerville</i>	51 <i>Jacques St.</i>
Richardson, Harry Elmer	<i>ee</i>	<i>East Aurora, N. Y.</i>	West Hall, 23
Richardson, Harry Herbert	<i>ab</i>	<i>Cambridge</i>	230 <i>Prospect St.</i>
Roberts, Harriet Norma	<i>ab</i>	<i>Medford Hillside</i>	35 <i>Emery St.</i>
Russell, Clara Rebecca	<i>ab</i>	<i>Winchester</i>	182 <i>Cambridge St.</i>
Sander, Eleonore Henriette Thekla	<i>ab</i>	<i>Cambridge</i>	117 <i>Holworthy St.</i>
Sanders, Annie Louisa	<i>ab</i>	<i>Wayland</i>	Start House, 4
Saunders, Ernest Alexander	<i>ce</i>	<i>Somerville</i>	16 <i>Summer St.</i>
Scoboria, Clarence Preston	<i>ab</i>	<i>Somerville</i>	23 <i>Veazie St.</i>
Spaulding, Rachel Josephine	<i>ab</i>	<i>Jaffrey, N. H.</i>	Metcalf Hall, A
Standish, Clara May	<i>ph</i>	<i>Segreganset</i>	10 <i>Lee St.</i>
Stearns, Lillian Josephine	<i>ab</i>	<i>W. Somerville</i>	399 <i>Highland Ave.</i>
Stowell, Ralph Gilman	<i>ce</i>	<i>Lynnfield</i>	A T $\Omega$ House
Teague, Donald Spencer	<i>ab</i>	<i>Caribou, Me.</i>	East Hall, 19
Tenney, Ruth	<i>ab</i>	<i>Auburn, Me.</i>	Metcalf Hall, 2
Titcomb, Grace	<i>ab</i>	<i>Farmington, Me.</i>	7 <i>Francesca Ave.</i>
Tufts, Florence Augusta	<i>ab</i>	<i>Malden</i>	38 <i>Clifton St.</i>
Walker, Florence Helen	<i>ab</i>	<i>W. Somerville</i>	26 <i>Wallace St.</i>
Watkins, Clarence Elmore	<i>ab</i>	<i>S. Manchester, Conn.</i>	$\Delta$ T House
Wood, Edward Holton	<i>ce</i>	<i>Saco, Me.</i>	East Hall, 5

## Sophomore Class

Armstrong, Elias Benjamin	<i>ph</i>	<i>Waltham</i>	Dean Hall, 9
Atsatt, John Thornton	<i>ab</i>	<i>Mattapoisett</i>	West Hall, 6
Bailey, Vesta Louise	<i>ab</i>	<i>W. Somerville</i>	50R College Ave.
Bean, William Wendell	<i>ee</i>	<i>W. Medford</i>	34 Canal St.
Bidwell, George Leslie	<i>ch</i>	<i>Jamaica Plain</i>	East Hall, 14
Bodge, Harold Heath	<i>ee</i>	<i>Westbrook, Me.</i>	West Hall, 30
Bowker, Ella Wallace	<i>ab</i>	<i>Somerville</i>	2 Hillside Ave.
Burnham, Fred Walker	<i>ab</i>	<i>Williamstown, Vt.</i>	East Hall, 12
Calderwood, Mellen Greeley	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 26
Chevalier, Louis	<i>ce</i>	<i>Naugatuck, Conn.</i>	28 Professors Row
Chase, Alfred Whitman	<i>ee</i>	<i>Cambridge</i>	1667 Cambridge St.
Clark, Alvar Warren	<i>ab</i>	<i>W. Somerville</i>	167 College Ave.
Claus, Henry Turner	<i>ab</i>	<i>Saugus</i>	West Hall, 4
Cobb, Ernest	<i>ph</i>	<i>Allston</i>	East Hall, 14
Collins, Ida Lillian	<i>ab</i>	<i>Everett</i>	29 Franklin St.
Comstock, Bertha Louise	<i>ab</i>	<i>West Medford</i>	
Crockett, Ernest Dana	<i>me</i>	<i>Dexter, Me.</i>	Δ T House
Dodge, Waldo Edgar	<i>me</i>	<i>Hyde Park</i>	East Hall, 20
Dods, Francis Alexander	<i>ee</i>	<i>Somerville</i>	24 Partridge Ave.
Doherty, Frederick Joseph Howard	<i>ee</i>	<i>Boston</i>	West Hall, 11
Douglas, Jerome Harvey	<i>ee</i>	<i>Hull</i>	West Hall, 22
Dow, Roy Gay	<i>ee</i>	<i>Bridgton, Me.</i>	
Dunham, Tom Denny	<i>ch</i>	<i>Barre, Vt.</i>	East Hall, 8
Ewell, Walter Warren	<i>ce</i>	<i>Medford</i>	236 Salem St.
Fairbank, Myra Lillian	<i>ab</i>	<i>Cambridge</i>	32 Shepard St.
Farnum, Carrie Alice	<i>ab</i>	<i>Marlboro</i>	Metcalf Hall, 11
Farrar, Edward Leslie	<i>ee</i>	<i>Assinippi</i>	East Hall, 24
Fisher, William Ernest	<i>ee</i>	<i>W. Somerville</i>	26 Hancock St.
Ford, Herman Flag	<i>ee</i>	<i>Danville, Me.</i>	West Hall, 31
Galarneau, Dennis Camille Amedee	<i>ab</i>	<i>Springfield</i>	West Hall, 10
Gammon, Robert Clair	<i>me</i>	<i>Lynn</i>	East Hall, 15
Garton, Florence Harriet	<i>ab</i>	<i>W. Somerville</i>	113 College Ave.
Gay, George Willard, Jr.	<i>sc</i>	<i>Norwood</i>	West Hall, 12
Gifford, Cora Louise	<i>ph</i>	<i>Woods Hole</i>	Metcalf Hall, C
Glenton, Frederico, Jr.	<i>ee</i>	<i>Nashua, N. H.</i>	Z Ψ House
Gordon, Harold Loring	<i>me</i>	<i>Auburndale</i>	Δ T House
Greene, Harry Marlon	<i>ab</i>	<i>Haverhill</i>	West Hall, 24
Guild, Emily Elizabeth	<i>ab</i>	<i>Brattleboro, Vt.</i>	Start House, 2
Harrington, Charles Ernest	<i>me</i>	<i>Lynn</i>	East Hall, 20
Holt, Roland Gordon	<i>mp</i>	<i>Hudson</i>	Δ T Δ House
Hunt, Murray Harding	<i>ch</i>	<i>Worcester</i>	West Hall, 16
Jenks, Daniel Ashley	<i>ab</i>	<i>Holyoke</i>	Dean Hall, 9
Loring, Seth Arthur	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 15



Lovejoy, Arthur Waldo	<i>ab</i>	<i>Lowell</i>	West Hall, 27
Marshall, John	<i>ee</i>	<i>New Salem</i>	East Hall, 1
Marshall, Wilnah Virginia	<i>ph</i>	<i>New Salem</i>	Allen House
McCoy, Florence Lillian	<i>ab</i>	<i>Somerville</i>	62 Main St.
Merrill, Charles Frank	<i>me</i>	<i>Somerville</i>	47 Fairmount Ave.
Milner, John George	<i>ee</i>	<i>Somerville</i>	East Hall, 29
Munroe, Carrie Josephine	<i>ab</i>	<i>Somerville</i>	70 Myrtle St.
Nason, Ralph Morgan	<i>ee</i>	<i>Orange</i>	West Hall, 22
Parks, Ralph Silas	<i>ab</i>	<i>Hudson</i>	East Hall, 14
Perry, Luther Packard	<i>ee</i>	<i>Shelburne Falls</i>	East Hall, 2
Pierce, Chester Earle	<i>ab</i>	<i>Rochester, Vt.</i>	West Hall, 24
Powers, Lorin Charles	<i>ab</i>	<i>Washington, D. C.</i>	West Hall, 28
Sanders, Amalie Cecilia Dorothea	<i>ab</i>	<i>Cambridge</i>	469 Broadway
Seery, Francis Joseph	<i>ce</i>	<i>Waterbury, Conn.</i>	East Hall, 27
Shaw, Frank Lester	<i>ab</i>	<i>Augusta, Me.</i>	
Shearer, Gordon Grant	<i>ee</i>	<i>Somerville</i>	33 Belmont St.
Smith, Floyd Elliott	<i>ee</i>	<i>Brattleboro, Vt.</i>	West Hall, 17½
Speirs, Ernest L.	<i>ee</i>	<i>Westbrook, Me.</i>	West Hall, 9
Swansey, Katherine Josephine	<i>ab</i>	<i>Somerville</i>	102 Prospect St.
Sweetser, Sidney Pulsifer	<i>ab</i>	<i>Philadelphia, Pa.</i>	West Hall, 21
Symmes, Gertrude Locke	<i>ab</i>	<i>Winchester</i>	77 Main St.
Taylor, Chester Emerson	<i>me</i>	<i>Clinton -</i>	Δ T House
Taylor, Mabelle Woodbury	<i>ab</i>	<i>Hudson</i>	Start House, 6
Temple, Charles Hosea	<i>ab</i>	<i>Hinsdale, N. H.</i>	West Hall, 17
Thompson, Ina Gertrude	<i>ab</i>	<i>Somerville</i>	202 School St.
Tompson, George Morris	<i>ce</i>	<i>Wakefield</i>	
Turner, Isabel Lowe	<i>ab</i>	<i>Bath, Me.</i>	Start House, 7
Viles, Blynn Fred	<i>ce</i>	<i>Medford</i>	81 Main St.
Warner, George Loring	<i>ab</i>	<i>Palmer</i>	West Hall, 32
Watkins, Lura Clarinda	<i>ab</i>	<i>So. Manchester, Ct.</i>	Metcalf Hall, C
Wellman, Hugh Horace	<i>ce</i>	<i>Westminster West, Vt.</i>	East Hall, 8
Wheeler, Grace Inez	<i>ab</i>	<i>Milan, N. H.</i>	Start House 6
Whitehouse, Wendell Lewis	<i>ch e</i>	<i>Somerville</i>	74 Jenny Lind Ave.
Whitney, Howard Rogers	<i>ce</i>	<i>Somerville</i>	107 Sycamore St.
Williams, Arthur	<i>ab</i>	<i>Charlestown</i>	1 Prospect St.
Wilson, Harry Percival	<i>ce</i>	<i>Worcester</i>	West Hall, 11
Wise, William Mason	<i>ab</i>	<i>West Newton</i>	West Hall, 27
Witham, Ernest Clair	<i>sc</i>	<i>Cumberland Mills, Me.</i>	East Hall, 25
Wood, Roy Eugene	<i>ce</i>	<i>Saco, Me.</i>	West Hall, 3
Woodbury, Charles Harlow	<i>ab</i>	<i>Auburn, Me.</i>	West Hall, 32
Woodward, Frank Coy	<i>ce</i>	<i>East Pepperell</i>	West Hall, 7
Works, Austin Melvin	<i>ab</i>	<i>Somerville</i>	214 Medford St.

## Freshman Class

Abbe, Arthur James	ab	Springfield	119 Adams St., Med.
Abbott, John Blackler	ch	E. Bethel, Vt.	East Hall, 1
Ames, Harvey Libby	e	Somerville	120 Perkins St.
Backus, John Alexander	e	Somerville	26 Kidder Ave.
Boardman, Seth Howard	e	Georgetown	East Hall, 26
Bryan, Harold John	e	Medford Hillside	1 Horton Ave.
Buckley, James Robert	ab	No. Grosvenordale, Ct.	72 Curtis St.
Buxton, Sara Lucy	ab	Somerville	286 Highland Ave.
Byrnes, Edward Francis	ab	Waterbury, Ct.	Dean Hall, 8
Cannell, Wirt Virgin	ce	Bridgton, Me.	Dean Hall, 8
Chandler, Eva Lillian	ab	Barton Landing, Vt.	Metcalf Hall 7
Chapin, Charles Mathews	ab	Rockland, Me.	East Hall, 25
Chapin, Harry Garfield	e	Lawrence	East Hall, 32
Cheney, Genevieve Henrietta	ab	Delevan, N. Y.	Metcalf Hall, 6
Clapp, Chester Blinn	ab	Devereux	
Clement, Fannie May	ab	Everett	4 Dean St.
Coupal, James Francis	sc	Everett	35 Wellington Ave.
Cousins, Clarence Edwin	ab	Salem	East Hall, 13
Crowell, Freeman Shedd	e	Lowell	East Hall, 16
Currier, Rudolph Winfield	ab	Lynn	East Hall, 13
Currier, Warren Mortimer	e	Winchester	Dean Hall, 10
Cutler, Leon George	e	No. Montpelier, Vt.	West Hall, 13
Dix, Leon Edward	e	Hartford, Conn.	East Hall, 33
Doherty, Philip Joseph	ab	Charlestown	22 Chestnut St.
Dole, Henry Haile	e	Arlington	361 Massachusetts Ave.
Dustin, Maurice Nathaniel	e	Dexter, Me.	East Hall, 31
Edwards, Alice Hayward	ab	W. Somerville	42 Packard Ave.
Ellis, Herbert Cram	e	Detroit, Mich.	East Hall, 10
Farnsworth, Dana Tufts	ab	Taunton	East Hall, 7
Fogg, Ralph Justin	e	Lynn	East Hall, 13
Foss, Fred Gilman	e	North Andover	East Hall, 9
Gale, David Carroll	e	East Dedham	West Hall, 13
Golden, Abram Culver	ph	Dorchester	50 Lawrence Ave.
Grant, Edward Leslie	ab	Franklin	A T Ω House
Graves, Otho McCarroll	e	Willimantic, Conn.	West Hall, 29
Gudge, Benjamin Joseph	e	White City, Kan.	Dean Hall, 2
Hall, Alfred Vargrave	ab	Peru, Me.	East Hall, 7
Hanscom, Henry Blake	ab	Leeds Junction, Me.	West Hall, 9
Haskell, Harold Clifford	ab	Rockland, Me.	Dean Hall, 12
Hayes, Chester Adams, Jr.	e	No. Berwick, Me.	East Hall, 5
Hayes, Will Francis	mp	Georgetown	East Hall, 26
Heald, Bertha May	ab	Woburn	Burlington St.
Holden, Joseph William	e	Meriden, Conn.	East Hall, 34

Hoxie, Harold Shepard	<i>e</i>	<i>No. Fairfield, Me.</i>	
Hunt, Guy Horton	<i>e</i>	<i>Somerville</i>	48 Jacques St.
Inglis, Henry Baxter	<i>e</i>	<i>Detroit, Mich</i>	East Hall, 10
Jackson, Mabel Estella	<i>ab</i>	<i>Lexington</i>	Start House, 1
Jackson, Minnie Wallis	<i>ab</i>	<i>Medford</i>	47 Fulton St.
Johnson, Phebe Chandler	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 14
Judkins, Agnes Frances	<i>ab</i>	<i>Merrimac</i>	Metcalf Hall, 6
Knight, Herbert Carr	<i>ee</i>	<i>Woodfords, Me.</i>	West Hall, 30
Knowlton, Edward Allen	<i>ab</i>	<i>New Bedford</i>	West Hall, 25
Lamb, Norval Edmund	<i>e</i>	<i>Attleboro</i>	West Hall, 12
Lendall, Harry Nelson	<i>e</i>	<i>Lynn</i>	West Hall, 29
Maas, Louis Olaf	<i>ee</i>	<i>Jamaica Plain</i>	West Hall, 28
Mackenzie, Fred Ross	<i>ab</i>	<i>Cliftondale</i>	West Hall, 4
Mann, Bertha Hill	<i>ab</i>	<i>Norway, Me.</i>	86 Mt. Vernon St. Somerville
Marshall, Dudley Blanchard	<i>e</i>	<i>Tufts College</i>	48 Professors Row
McGourty, John Farrell	<i>e</i>	<i>Boston</i>	22 Francis St.
Metcalf, Ernest George	<i>ab</i>	<i>Brooklyn, N. Y.</i>	East Hall, 23
Merrill, Carl Jewett	<i>e</i>	<i>Somerville</i>	339 Summer St.
Michael, Herbert Ledlie	<i>ab</i>	<i>Kingston, N. Y.</i>	West Hall, 25
Miller, George Stewart	<i>ab</i>	<i>No. Andover</i>	East Hall, 17
Morris, James Joseph	<i>e</i>	<i>Lowell</i>	East Hall, 16
Mullen, John Joseph	<i>e</i>	<i>Wellesley</i>	East Hall, 6
Nash, Curtis Whithed	<i>ab</i>	<i>Winchester</i>	
Noyes, Marion Temple	<i>ab</i>	<i>W. Somerville</i>	15 Park Ave.
Nye, Laila Campbell	<i>ab</i>	<i>W. Somerville</i>	33 Electric Ave.
Page, Arthur Smith	<i>e</i>	<i>Everett</i>	36 Dean St.
Paine, Alice Peabody	<i>ab</i>	<i>Groveland</i>	Start House, 1
Phillips, Leslie Blaine	<i>e</i>	<i>W. Somerville</i>	1088 Broadway
Priest, Alice Eaton	<i>ab</i>	<i>Canton, N. Y.</i>	Start House, 3
Quinlan, Edward Jerome	<i>ab</i>	<i>Meriden, Conn.</i>	East Hall, 34
Ringdahl, Frederick Wilhelm	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 16
Riordan, Alice Cashman	<i>ab</i>	<i>Rockland</i>	Start House
Roberts, Charles Fred	<i>e</i>	<i>Caribou, Me.</i>	East Hall, 33
Saunders, Louise Melbourne	<i>ab</i>	<i>Somerville, 24 Powder House Terrace</i>	
Sibley, Ruth Annie	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 14
Smith, Richard Curtis	<i>e</i>	<i>Medford</i>	42 Dudley St.
Steele, Martha Taylor	<i>ab</i>	<i>Stoughton</i>	
Steinberg, Henry Joseph	<i>ab</i>	<i>Webster</i>	62 Quincy St.
Swenson, Henry	<i>ce</i>	<i>Karlshamn, Sweden</i>	
Tewksbury, Ella May	<i>ab</i>	<i>Lexington</i>	Bedford St.
Tripp, Angie May	<i>ab</i>	<i>Woburn</i>	2 Eastern Ave.
Vickery, Reina Gladys	<i>ab</i>	<i>Medford Hillside</i>	Edison Ave.
White, George Ritch	<i>e</i>	<i>Danbury, Conn.</i>	East Hall, 9

Whitman, Clara Hattie	<i>ab Fishers Island, N. Y.</i>	Allen House
Whitman, Hugh Redway	<i>ab Fishers Island, N. Y.</i>	West Hall, 31
Winslow, Geoffrey	<i>e New Bedford</i>	West Hall, 23
York, Fred Carl	<i>e Newmarket, N. H.</i>	East Hall, 21
Estabrooks, Louis Bancroft	<i>Wollaston</i>	West Hall, 26
Small, Florence E.	<i>ab So. Portland, Me.</i>	Start House, 5

## Special Students

Aldrich, Bertha Alice	<i>No. Cambridge</i>	27 Blake St.
II. <i>Music</i>		
Annable, Anna Gertrude	<i>West Somerville</i>	101 Elm St.
I. <i>Biology</i>		
Bolles, Margaret Chapman	<i>W. Somerville</i>	184 College Ave.
II. <i>French</i>		
Brown, Dorothy Margaret Temple	<i>Winchester</i>	
I. <i>English and Biology</i>		
Brown, Walter Campbell	<i>Castine, Me.</i>	Δ T House
IV. <i>Engineering</i>		
Crabtree, Arthur Howard	<i>Somerville</i>	112 Jenny Lind Ave.
I. <i>Surveying</i>		
Crocker, Elizabeth Childs	<i>W. Somerville</i>	42 Curtis St.
I. <i>Modern Languages</i>		
Eames, Louise Bradley	<i>Reading</i>	Metcalf Hall, 15
I. <i>Modern Languages and Music</i>		
Hayden, Eleanore Soule	<i>W. Somerville</i>	20 Day St.
II. <i>Music</i>		
Hazeltine, Clyda Blanche	<i>W. Somerville</i>	20 Day St.
II. <i>Modern Languages</i>		
Imai, Tame	<i>Tokio, Japan</i>	Metcalf Hall, 7
I. <i>English</i>		
Jackson, Gertrude Ada	<i>Medford</i>	86 Otis St.
IV. <i>Modern Languages</i>		
Kidder, Martin Latimer	<i>Rochester, Vt.</i>	West Hall, 23
III. <i>Engineering</i>		
Park, Florence Colburn	<i>Winchester</i>	12 Norwood St.
II. <i>Music</i>		
Prince, Percy Sylvester	<i>Salem</i>	East Hall, 29
I. <i>English</i>		
Sheldon, Charles Talbot	<i>No. Billerica</i>	
III. <i>Engineering</i>		
Stone, Charles Henry	<i>Barre, Vt.</i>	10 Emery St.
I. <i>Science</i>		
Toy, Harvey Marshall	<i>San Francisco, Cal.</i>	West Hall, 17
II. <i>History</i>		

# Divinity School

## Graduate Students

Paige, John Merrill, B.D.	<i>Medford Hillside</i>	77 <i>Adams St.</i>
Satoh, Kiyoshi, B.D.	<i>Tokio, Japan</i>	Paige Hall, 22

## Fourth Year

Andrews, Charles Masson B.S., 1900	<i>Newtonville</i>	Paige Hall, 18
Gale, Frank Randall A.B., 1897	<i>Berlin</i>	
Maxwell, Alfred Roscoe	<i>Moore's Mills, N. B.</i> 122 Summer St., Medford	

## Second Year

Emmons, Charles Henry	<i>Bridgeport, Conn.</i>	Paige Hall, 6
Hadley, Rubens Rey	<i>Sterling</i>	Paige Hall, 13
Howes, George Henry	<i>Lowell</i>	Paige Hall, 7
Lewis, George Hallam	<i>Meriden, Conn.</i>	Paige Hall, 31
Miller, George Arthur	<i>N. Attleboro</i>	Paige Hall, 30

## First Year

Angel, Frank James	<i>East Aurora, N. Y.</i>	Paige Hall, 36
Gay, George Augustus	<i>Meriden, Conn.</i>	Paige Hall, 19
Gilbert, Russ Hayden	<i>Hingham</i>	
Hillstren, Charles H.	<i>Bismark, N. D.</i>	Paige Hall, 5
Parkhurst, Henry Adams	<i>Dunstable</i>	Paige Hall, 25
Raspe, Otto	<i>Baltimore, Md.</i>	Paige Hall, 34
Willis, Sidney Joel	<i>West Concord, Vt.</i>	Paige Hall, 24

# Bromfield-Pearson School

Burrage, Alvah Lowell	<i>Lowell</i>	East Hall, 18
Crawford, Hugh Wadsworth	<i>Webster</i>	53 Belvidere St., Boston
Doherty, Daniel Francis	<i>New Dorchester</i>	61 Bernard St.
Hadley, Norris Edmund	<i>Somerville</i>	35 Conwell Ave.
Jones, John Paul	<i>Woburn</i>	662 Main St.
Malone, Thomas Joseph	<i>Charlestown</i>	12 Chapman St.
Proctor, Fred Willis	<i>Wilton, N. H.</i>	East Hall, 6
Sanborn, John Freeman	<i>New Market, N. H.</i>	East Hall, 21
Smead, Alfred Felton	<i>Greenfield</i>	Dean Hall, 10
Snow, Paul Revere	<i>Somerville</i>	74 Jenny Lind Ave.
Wilder, Frederick Gilson	<i>Arlington</i>	7 Chapman St.



# Medical School

## Fourth Year

Averell, Charles Wilson, A.M. (Colby)	Waltham
Baker, Ida Belle	New Boston, N. H.
Barrett, George Washington	Buffalo, N. Y.
Buck, Charles Edward, Ph.G. (Phila. Coll. Phar.)	Westminster, Vt.
Butterfield, George Kittredge	Reeds Ferry, N. H.
Caswell, Bertram Horace	Wilmington
Clarke, Inez Louise, A.B. (Radcliffe)	Cambridge
Conway, Francis Bernard	Cambridge
Cotter, Maurice Edward	Lawrence
Croswell, Mary Sibylla, A.B. (Colby)	Farmington Falls, Me.
Daly, Jeremiah James	Andover
Derrick, George William	Cambridgeport
Downing, Charles Harland	Portsmouth, N. H.
Dubois, Eoline B. C.	Cranston, R. I.
Fleming, Patrick Joseph	Cambridge
Halsall, Mary Elizabeth	E. Boston
Haskins, Frank Eugene, Ph.G. (Mass. Coll. Phar.)	Brattleboro, Vt.
Jacobs, Charles Michael	Somerville
Joyce, James Henry	Salem
Keeler, William Basil	Boston
Kerr, Isabella Dickieson,	Medford
Langworthy, Henry Glover	Dubuque, Iowa
Mahoney, Francis Aloysius	Chelsea
Medlar, Faith Curtis	Boston
McElroy, Frank Henry	Providence, R. I.
McNeil, Edmund Johnson, Jr.	Cambridge
Michael, Helen Abbott	Boston
Mitchell, Ethel Susanna	Plymouth, N. H.
Murphy, Edward Martin	Lowell
O'Brien, Loretta Joy	Chelsea
Parr, John	Lawrence
Reis, Frederick	Boston
Rice, Florence Frances	Boston
Ripley, William Littlefield	Newton
Rose, William Milton	Cambridge
Sheehan, William Joseph	S. Boston
Stickney, Elizabeth Mary	Dorchester
Sullivan, Frank Aloysius	St. Stephens, N. B.

Swan, Horace Cheney . . . . .	<i>Boston</i>
Topaz, Anna . . . . .	<i>Boston</i>
Turner, James Henry . . . . .	<i>Salem</i>
Wernick, Benzoin G. . . . .	<i>Boston</i>
Wheatley, Louis Frederick . . . . .	<i>Meriden, Conn.</i>
Whittle, John Augustus . . . . .	<i>Wakefield</i>

## Third Year

Ameno, Joseph Louis . . . . .	<i>Boston</i>
Anderson, John Hammond . . . . .	<i>Quincy</i>
Bennett, William Henry . . . . .	<i>Roxbury</i>
Biron, Wilfred Louis . . . . .	<i>Manchester, N. H.</i>
Brady, Frank Robert . . . . .	<i>Lowell</i>
Buckley, Daniel Joseph . . . . .	<i>Arlington</i>
Buchold, Fred George . . . . .	<i>Lawrence</i>
Carley, Margaret . . . . .	<i>Boston</i>
Ceconi, John Aloysius . . . . .	<i>Dorchester</i>
Chase, Lawrence Milton . . . . .	<i>W. Duxbury</i>
Chase, James Smalley . . . . .	<i>Duxbury</i>
Corey, Frederick Hall . . . . .	<i>Roxbury</i>
Cyr, Emile Edward . . . . .	<i>Lawrence</i>
Dailey, Edward Joseph . . . . .	<i>Somerville</i>
Dearborn, Luther Gould, Jr., A.B. . . . .	<i>Somerville</i>
Derby, Fred William . . . . .	<i>Arlington</i>
Ferguson, Creighton . . . . .	<i>Cambridge</i>
Foster, Maude Ashley . . . . .	<i>Melrose</i>
Gettings, Thomas Lawrence . . . . .	<i>Fall River</i>
Harrington, Robert Brine . . . . .	<i>Somerville</i>
Harrison, Henry . . . . .	<i>Ware</i>
Holt, Lucinda Mary-Belle, B.L. (Smith) . . . . .	<i>Portland, Me.</i>
Horne, Lester Wallace . . . . .	<i>Norway, Me.</i>
Janes, Arthur Percy . . . . .	<i>Boston</i>
Kelly, John Joseph . . . . .	<i>Dorchester</i>
Kendall, George Ralph . . . . .	<i>Boston</i>
Kenney, Walter Clement . . . . .	<i>Sharon, Vt.</i>
Lawton, William Francis . . . . .	<i>Charleston, So. Carolina</i>
Levins, Nathan Noah . . . . .	<i>Boston</i>
Mayrand, Eugene . . . . .	<i>Lowell</i>
McGurn, William J. . . . .	<i>Bridgewater</i>
Monahan, John Ambrose . . . . .	<i>Clinton</i>
Murphy, Charles Augustus . . . . .	<i>Boston</i>
Murphy, Thomas William . . . . .	<i>Lawrence</i>
Myles, Leo Thomas . . . . .	<i>Cambridge</i>
Neuman, Leon . . . . .	<i>Boston</i>

Newton, William Henry . . . . .	<i>Waltham</i>
Paull, Chester Alpheus . . . . .	<i>Hollis, N. H.</i>
Pease, Charles Valentine . . . . .	<i>Boston</i>
Pofcher, Elias Harry . . . . .	<i>Everett</i>
Reilly, Thomas . . . . .	<i>Brockton</i>
Robinson, Philip Eaton . . . . .	<i>Medford</i>
Robison, J. Collier . . . . .	<i>Fillmore, Utah</i>
Scanlan, Thomas John . . . . .	<i>Boston</i>
Schmidt, Richard Diedrich . . . . .	<i>Boston</i>
Seymour, Horace Darling . . . . .	<i>Warren, R. I.</i>
Shaw, Matthew Albert Neil . . . . .	<i>Boston</i>
Shay, Charles Edwin . . . . .	<i>Roxbury</i>
Smith, William Morgan . . . . .	<i>Jamaica Plain</i>
Stockbridge, Albert Horatio . . . . .	<i>Lynn</i>
Stoodley, Harry Marr . . . . .	<i>Somerville</i>
Sullivan, Cornelius Augustine . . . . .	<i>Everett</i>
Tower, Freeman Augustus . . . . .	<i>Sterling Junction</i>
Walsh, Joseph . . . . .	<i>Augusta, Me.</i>
Walsh, Joseph Francis . . . . .	<i>Lawrence</i>
Wallace, Annie Marie . . . . .	<i>West Gore, N. S.</i>
Warren, Lizzie Maude . . . . .	<i>New Boston, N. H.</i>
Van Wieren, Jean Kerr . . . . .	<i>Boston</i>
Woodill, Edith Esty . . . . .	<i>Dorchester</i>

### Second Year

Abbott, Harry Daniel . . . . .	<i>Lynn</i>
Bigelow, Alice Houghton, A.B. (Boston Univ.)	<i>Boston</i>
Blanchard, Stanley Wayne . . . . .	<i>Montpelier, Vt.</i>
Boardman, Charles Augustus . . . . .	<i>Boston</i>
Bogan, Frederic Leon . . . . .	<i>Boston</i>
Brassil, Timothy Francis . . . . .	<i>Cambridge</i>
Brearton, Edward John . . . . .	<i>South Boston</i>
Breen, James Henry . . . . .	<i>Hudson</i>
Brown, Edison William . . . . .	<i>Boston</i>
Caldwell, Joseph Davis . . . . .	<i>Waltham</i>
Cregg, Francis Aloysius . . . . .	<i>Lawrence</i>
Carvill, Lizzie Maud . . . . .	<i>Somerville</i>
Choate, Alton Jay . . . . .	<i>Salem</i>
Clark, Harry William . . . . .	<i>Woburn</i>
Clay, Waldo Hoit . . . . .	<i>Laconia, N. H.</i>
Conwell, Walter Livingstone, Jr. . . . .	<i>Boston</i>
Cotter, Edward Joseph . . . . .	<i>Roxbury</i>
Cox, Ann Caroline . . . . .	<i>Boston</i>
Cummings, John Francis . . . . .	<i>Brockton</i>

Curry, Ernest Francis . . . . .	<i>Melrose</i>
Curtis, Alton Kallock . . . . .	<i>Boston</i>
Cutts, Alice May McDow . . . . .	<i>Cambridge</i>
Derrick, Joseph Stephen . . . . .	<i>Charlestown</i>
Dunham, Adeline Francis . . . . .	<i>Boston</i>
Dutcher, William Austin . . . . .	<i>Boston</i>
Dwyer, William Joseph . . . . .	<i>Cambridge</i>
Eastman, George Warren . . . . .	<i>E. Corinth, Me.</i>
Eddy, Merritt Otis . . . . .	<i>Townshend, Vt.</i>
Fiske, Willard Orville . . . . .	<i>Lawrence</i>
Fiske, Rebecca Cutter . . . . .	<i>Grafton</i>
Galbraith, Anna Veitch . . . . .	<i>Victoria, Canada</i>
Gately, Mary Agatha Murray . . . . .	<i>Boston</i>
Gile, Frank Herbert, Jr. . . . .	<i>Melrose</i>
Gookin, Edward Richard . . . . .	<i>Boston</i>
Goddu, Louis Adolore Oliver, Ph.G. (Mass. Coll. Phar.)	<i>Winchester</i>
Hammond, Harry Weymouth . . . . .	<i>Chocoma, N. Y.</i>
Hardwick, Sydney Curtis . . . . .	<i>Quincy</i>
Henry, Thomas Francis . . . . .	<i>Salem</i>
Higgins, George Vincent . . . . .	<i>N. Abington</i>
Hinchliffe, Frederick . . . . .	<i>Waltham</i>
Houghton, Richard Henry . . . . .	<i>Boston</i>
Hussey, William Francis . . . . .	<i>Boston</i>
Kendrick, Joseph Thomas . . . . .	<i>Boston</i>
Kennison, Frederick Marshman . . . . .	<i>Boston</i>
Kelley, John Michael . . . . .	<i>Boston</i>
Kelly, Harvey Augustine . . . . .	<i>Dorchester</i>
Kingsbury, Walter Warren . . . . .	<i>Walpole, N. H.</i>
Landers, George Bagnell . . . . .	<i>Chelsea</i>
Long, Merritt Allen . . . . .	<i>Manchester</i>
Lynch, William . . . . .	<i>Boston</i>
MacPhail, John Gunn . . . . .	<i>Boston</i>
Medalia, Leon Sam Abrahams . . . . .	<i>Palestine, Turkey</i>
Meehan, Patrick Joseph . . . . .	<i>Lowell</i>
McCarthy, Eugene Justin . . . . .	<i>Malden</i>
McCarthy, Francis Patrick . . . . .	<i>Boston</i>
McGaffigan, Bernard Francis . . . . .	<i>Charlestown</i>
McLaughlin, John David . . . . .	<i>E. Boston</i>
Murphy, Frederick Vincent . . . . .	<i>Brockton</i>
Murphy, Anna Frances . . . . .	<i>Nashua, N. H.</i>
Nolan, James Patrick Augustine . . . . .	<i>Boston</i>
Noyes, William Nelson . . . . .	<i>Portsmouth, N. H.</i>
O'Brien, William Smith . . . . .	<i>Marlboro</i>
Ordway, Mabel Dyer . . . . .	<i>Boston</i>

Palmer, Louis James . . . . .	<i>Boston</i>
Peters, Solon W. . . . .	<i>Sterling</i>
Peterson, Clark Kimball . . . . .	<i>E. Boston</i>
Rand, Anna Ethel . . . . .	<i>Worcester</i>
Reeves, William Arthur . . . . .	<i>Lynn</i>
Richardson, Horace Kimball . . . . .	<i>Medford</i>
Roach, Alfred John . . . . .	<i>Lowell</i>
Rochford, Grace Elizabeth . . . . .	<i>Wellesley</i>
Rogers, Frank Norwood . . . . .	<i>Dedham</i>
Rowe, Carl Allen . . . . .	<i>Franklin, N. H.</i>
Rushford, Edward Allan . . . . .	<i>Salem</i>
Scannell, James Joseph . . . . .	<i>Roxbury</i>
Sheehy, Richard William . . . . .	<i>Weymouth Centre</i>
Sherman, George Ernest . . . . .	<i>Cambridge</i>
Simon, Arthur Leslie . . . . .	<i>Waltham</i>
Skinner, Ralph Douglas . . . . .	<i>Jamaica Plain</i>
Smith, Myrtle . . . . .	<i>Somerville</i>
Stacey, Winthrop Downing . . . . .	<i>Charlestown</i>
Sundin, Axel Kassemir Hildebrand . . . . .	<i>Providence, R. I.</i>
Taylor, Maude Winnifred . . . . .	<i>Hartford, Conn.</i>
Thompson, Harold Fenton . . . . .	<i>Boston</i>
Tinkham, Oliver Goldsmith . . . . .	<i>Weymouth</i>
Tucker, Arthur Wallace . . . . .	<i>Chelsea</i>
Tyson, Forrest Clark . . . . .	<i>Tipton, Mich.</i>
Walker, William Dacre . . . . .	<i>Peabody</i>
Warren, Thomas Francis . . . . .	<i>Fall River</i>
Weeden, Allen Augustus . . . . .	<i>Providence, R. I.</i>
Whelan, Charles, B.S. (Dartmouth) . . . . .	<i>Weymouth</i>
Williams, David Lawrence . . . . .	<i>Boston</i>
Wood, Albert John . . . . .	<i>Allston</i>
Young, Charles Henry . . . . .	<i>Woburn</i>
Zarratt, Josefa . . . . .	<i>Boston</i>

### First Year

Aldrich, George Herman . . . . .	<i>Marlboro, N. H.</i>
Bagnall, Arthur Wallace . . . . .	<i>Roslindale</i>
Baker, Myron Clarke . . . . .	<i>Knoxville, Tenn.</i>
Barstow, Andrew Thaddeus . . . . .	<i>E. Braintree</i>
Bates, Lewis Beals . . . . .	<i>N. Weymouth</i>
Ballou, Ambrose Roche . . . . .	<i>Quincy</i>
Bickford, Wallace Mellen . . . . .	<i>Portland, Me.</i>
Blaisdell, Albert Chester . . . . .	<i>N. Woburn</i>
Bradbury, Walter Lyman . . . . .	<i>Boston</i>
Brown, William James . . . . .	<i>Boston</i>



Brown, Louis Raymond . . . . .	<i>Putnam, Conn.</i>
Brown, John Elliott . . . . .	<i>Jamaica, B. W. I.</i>
Bruce, John Rufus . . . . .	<i>E. Weymouth</i>
Burns, Richard Charles . . . . .	<i>Lawrence</i>
Butler, John Dennison . . . . .	<i>Liverpool, N. S.</i>
Cahill, Thomas Joseph . . . . .	<i>Cambridge</i>
Callahan, John Francis . . . . .	<i>Marlboro</i>
Campbell, William Marie . . . . .	<i>Dorchester</i>
Candage, William Crosswell Doane . . . . .	<i>Seal Harbor, Me.</i>
Carey, Frank Arthur . . . . .	<i>Taunton</i>
Carley, Frederick James . . . . .	<i>Tewksbury</i>
Carr, Gladys Lydia . . . . .	<i>Chelsea</i>
Carr, Dennis Henry . . . . .	<i>Dorchester</i>
Carroll, Arthur Everett . . . . .	<i>Danvers</i>
Carroll, Joseph Arthur . . . . .	<i>Dorchester</i>
Carter, Fred. Henry . . . . .	<i>Charlestown</i>
Chalmers, Hattie Elizabeth . . . . .	<i>Hudson</i>
Clune, Arthur J. . . . .	<i>Springfield</i>
Coburn, Clarence Orrin . . . . .	<i>Manchester, N. H.</i>
Cogan, Henry James . . . . .	<i>Hyde Park</i>
Cole, Ralph Waldo Emerson . . . . .	<i>Franklin Falls, N. H.</i>
Connor, John Henry Francis . . . . .	<i>Roxbury</i>
Cowan, Marion . . . . .	<i>Lynn</i>
Coy, Lucien Wright, Jr. . . . .	<i>Little Rock, Ark.</i>
Crimmin, Philip Patrick . . . . .	<i>Brockton</i>
Crowley, John Joseph . . . . .	<i>Everett</i>
David, Oliver Joseph . . . . .	<i>Lowell</i>
Davis, Ernest Leland . . . . .	<i>Springfield</i>
Davis, Fred Norman . . . . .	<i>Everett</i>
Day, Cushman . . . . .	<i>Boston</i>
Deacon, Thomas Irving . . . . .	<i>Cambridge</i>
Dennison, Lyman King . . . . .	<i>Waterbury, Conn.</i>
Donahue, Francis Thomas . . . . .	<i>N. Brookfield</i>
Doran, John Michael . . . . .	<i>Charlestown</i>
Dougherty, William Joseph . . . . .	<i>Manchester</i>
Doyle, Francis Michael . . . . .	<i>Methuen</i>
Dudley, Oscar Albert . . . . .	<i>Cochituate</i>
Eaton, Marland Hooper . . . . .	<i>Beverly</i>
Fallon, George Patrick . . . . .	<i>Clinton</i>
Fallon, Joseph Francis . . . . .	<i>Brookline</i>
Fallon, Thomas Francis, Jr. . . . .	<i>Clinton, Mass.</i>
Felch, Lewis Perley . . . . .	<i>Boston</i>
Fletcher, Arthur Stanton . . . . .	<i>Waterville, Me.</i>
Fletcher, Christopher . . . . .	<i>Chelsea</i>

Ford, Foster Studley . . . . .	<i>N. Grafton</i>
Forsyth, James Perkins . . . . .	<i>Philadelphia, Pa.</i>
Foss, Ralph Emery . . . . .	<i>Peabody</i>
Foster, George Sanford . . . . .	<i>Manchester, N. H.</i>
Gage, Arthur Tenney . . . . .	<i>Winchester</i>
Gallagher, Charles James . . . . .	<i>Roxbury</i>
George, Alvin . . . . .	<i>Boston</i>
George, Ariel Wellington . . . . .	<i>Bristol, N. H.</i>
Gibson, George William . . . . .	<i>Chicopee</i>
Glen, Cornelius Leonard . . . . .	<i>Pawtucket, R. I.</i>
Glynn, William Clinton . . . . .	<i>Clinton</i>
Goldberg, Elias . . . . .	<i>Boston</i>
Grainger, Joseph Francis . . . . .	<i>Cambridge</i>
Greenwood, Austin Ellsworth . . . . .	<i>Lowell</i>
Hadley, Amos William . . . . .	<i>Worcester</i>
Halman, William Joseph . . . . .	<i>Somerville</i>
Ham, Helen Willard . . . . .	<i>Middleboro</i>
Hamilton, Harry Levi . . . . .	<i>Old Town, Me.</i>
Harmon, Ernest Linwood . . . . .	<i>Biddeford, Me.</i>
Harrington, Clifton Ward . . . . .	<i>Hathorne</i>
Harrison, Columbus William . . . . .	<i>Boston</i>
Hennessey, William Warren . . . . .	<i>Salem</i>
Hermann, Louis Alfred . . . . .	<i>Boston</i>
Hill, Harry Joseph . . . . .	<i>Boston</i>
Hill, Johnson Washington, B.D. . . . .	<i>Boston</i>
Hoey, Joseph Augustin . . . . .	<i>E. Boston</i>
Holmes, George Winslow . . . . .	<i>Belfast, Me.</i>
Hughes, Archibald William . . . . .	<i>Providence, R. I.</i>
Hurley, Cornelius Thomas . . . . .	<i>Boston</i>
Innes, Carrie Louise . . . . .	<i>Boston</i>
Kapp, Juno Belle, . . . . .	<i>Denver, Col.</i>
Kearney, Joseph Patrick . . . . .	<i>Lowell</i>
Keenan, George Francis . . . . .	<i>Boston</i>
Kelley, Edward Paul . . . . .	<i>Woburn</i>
Kelly, Thomas Francis . . . . .	<i>Cambridge</i>
Kirkpatrick, Gilbert Stanley . . . . .	<i>Wilmington</i>
Klein, Isaac . . . . .	<i>Boston</i>
Lacey, Henry Orlando . . . . .	<i>Cambridge</i>
Lilley, John Franklin . . . . .	<i>New Bedford</i>
Little, Charles Bingley . . . . .	<i>Everett</i>
Looney, Edward Michael . . . . .	<i>Salem</i>
Lougee, John Leroy . . . . .	<i>Boston</i>
Luce, Leroy Alson . . . . .	<i>Gaysville, Vt.</i>
Mahoney, Charles Frederick . . . . .	<i>E. Boston</i>

Mahoney, Walter Francis . . . . .	<i>Hudson</i>
Makler, Moses . . . . .	<i>Boston</i>
Mara, Joseph Lawrence . . . . .	<i>Boston</i>
Marlin, Anna Sarah . . . . .	<i>Boston</i>
Marr, Ben Butler . . . . .	<i>Sussex, N. B.</i>
McColgan, John Cornelieus . . . . .	<i>E. Boston</i>
Mehan, Joseph Aloysius . . . . .	<i>Lowell</i>
Monahan, John Terrence . . . . .	<i>Hopkinton</i>
Moulton, Sam Russell . . . . .	<i>Newton Highlands</i>
McCarthy, Lawrence John . . . . .	<i>Vernon, Conn.</i>
McCarthy, Timothy William . . . . .	<i>Vernon, Conn.</i>
McConville, Frederick Walter . . . . .	<i>Boston, Mass.</i>
McCready, Leo Thomas . . . . .	<i>Providence, R. I.</i>
McDonald, Louis Ronald . . . . .	<i>Charlestown</i>
McDonell, George Joseph . . . . .	<i>So. Boston</i>
MacGhee, Charles Maxwell . . . . .	<i>Knoxville, Tenn.</i>
McMahon, Michael Francis E. . . . .	<i>Providence, R. I.</i>
MacNeil, Charles Seward Jadis . . . . .	<i>Boston</i>
McVey, Frederick Joseph . . . . .	<i>Dorchester</i>
Mintz, Samuel Charles . . . . .	<i>Boston</i>
Morse, Irene May, A.M. . . . .	<i>Laramie, Wyoming</i>
Murphy, John Michael . . . . .	<i>Monson</i>
Nickerson, Mary Abbie . . . . .	<i>Cohasset</i>
Nolan, Henry Stuart . . . . .	<i>Somerville</i>
Ober, Frank Roberts . . . . .	<i>Northeast Harbor, Me.</i>
Phillips, Richard Hornorhas . . . . .	<i>Boston</i>
Pitkin, Edith Winifred, B.A. (Wellesley) . . . . .	<i>Albany, N. Y.</i>
Quinn, John Devereaux . . . . .	<i>Worcester</i>
Raymond, Charles Stanley . . . . .	<i>Providence, R. I.</i>
Regan, William Henry . . . . .	<i>Boston</i>
Roughan, Charles Michael . . . . .	<i>Collinsville</i>
Sanborn, Mary Esther . . . . .	<i>Brookline</i>
Saunders, James Augustin . . . . .	<i>Lowell</i>
Sawyer, Samuel Ellison . . . . .	<i>Lewiston, Me.</i>
Segal, Jennie . . . . .	<i>East Boston</i>
Shaw, John William . . . . .	<i>Amesbury</i>
Spline, Robert Emmett . . . . .	<i>Dorchester</i>
Stammers, Joseph Collins . . . . .	<i>Charlestown</i>
Stevens, William Russell . . . . .	<i>Marshfield</i>
Stone, William Livingstone . . . . .	<i>Chelsea</i>
Sturnick, Frederick Michael . . . . .	<i>Boston</i>
Sutor, Henry Albert . . . . .	<i>Barton, Vt.</i>
Sweeney, Mary Agnes . . . . .	<i>Nashua, N. H.</i>
Taylor, Roy Arnold . . . . .	<i>Waltham</i>

Trottier, Arthur Ovilar . . . . .	<i>Providence, R. I.</i>
Washburn, Chester Angus . . . . .	<i>Everett</i>
Werner, Joseph Samuel . . . . .	<i>Boston</i>
Wheaton, Horace Frank . . . . .	<i>Cambridge</i>
Young, Evangeline Wilson . . . . .	<i>Boston</i>
Whipple, Lewis A. . . . .	<i>Essex</i>
Whitney, Clifford Calvin . . . . .	<i>Bridgton, Me.</i>
Wright, Francis Joseph . . . . .	<i>Roxbury</i>
Wyman, George Ernest . . . . .	<i>W. Somerville</i>

### Special Students

Baker, Lily Owen . . . . .	<i>Boston</i>
Bangs, Edwin Mayo . . . . .	<i>Boston</i>
Bloomberg, Senior . . . . .	<i>Boston</i>
Chandler, Clarence Luther . . . . .	<i>Townsend</i>
Coffin, Harriet Frances . . . . .	<i>E. Orange, N. J.</i>
Coulson, Richard . . . . .	<i>Boston</i>
Currier, Richard Doe . . . . .	<i>Boston</i>
Daly, John Augustine . . . . .	<i>Andover</i>
Danforth, Harland Abbott . . . . .	<i>Peabody</i>
Davis, John Henry, A.B., A.M. . . . .	<i>Georgetown</i>
DeSorgher, Louis Lee . . . . .	<i>Boston</i>
Donovan, John Henry . . . . .	<i>Lowell</i>
Garry, John Joseph . . . . .	<i>Methuen</i>
Gorham, George Hartley . . . . .	<i>Boston</i>
Hardwick, Frederick Veazie . . . . .	<i>Quincy</i>
Hastings, Gertrude Wentworth, A.B. (Cornell)	<i>Winthrop</i>
Haviland, Walter Childs . . . . .	<i>Holliston</i>
Hawkes, George W. . . . .	<i>Chelsea</i>
Hayes, Mary Agnes . . . . .	<i>Boston</i>
Herring, William Mortimer . . . . .	<i>N. Attleboro</i>
Irving, Harry . . . . .	<i>Providence, R. I.</i>
Kapp, Julia Seaton, M. D. . . . .	<i>Denver, Col.</i>
Mason, Alton Erastus . . . . .	<i>Dighton</i>
Montgomery, Mary Isabel . . . . .	<i>Charlottetown, Canada</i>
Murphy, Frederick Paul . . . . .	<i>Lowell</i>
Nichols, Franklin Stuart . . . . .	<i>Worcester</i>
O'Brien, William Francis . . . . .	<i>Pawtucket, R. I.</i>
Patterson, Alice Maud, M. D. . . . .	<i>Peabody</i>
Pierson, John Corbin . . . . .	<i>Tufts College</i>
Pinner, Charles Francis . . . . .	<i>Boston</i>
Plunkett, Harold Brabazon . . . . .	<i>Lowell</i>
Regan, Frank Alfred . . . . .	<i>Boston</i>
Sanborn, Warren Bigelow . . . . .	<i>Augusta, Me.</i>

Tangney, Charles William . . . . .	<i>Rockland</i>
Thurber, Stephen Francis . . . . .	<i>Warren, R. I.</i>
Toohy, Thomas Victor . . . . .	<i>Roxbury</i>
Turner, George William . . . . .	<i>Fall River</i>
Welles, Franklin . . . . .	<i>Boston</i>
Whitman, Luther Oakes . . . . .	<i>St. Cloud, Minnesota</i>

## Dental School

### Senior Class.

Bence, Carrie Isabelle Hough . . . . .	<i>Pawtucket, R. I.</i>
Bern, Philip Sigfried . . . . .	<i>New York, N. Y.</i>
Bowles, Boyd Franklin . . . . .	<i>Waterville, N. S.</i>
Cargill, William Lowell . . . . .	<i>Liberty, Me.</i>
Carpenter, George William . . . . .	<i>Rehoboth</i>
Cogger, Francis Albert . . . . .	<i>Boston</i>
Cole, Charles Redman . . . . .	<i>Pawtucket, R. I.</i>
Dixon, Joseph Reynolds . . . . .	<i>Boston</i>
Doubleday, Arthur William . . . . .	<i>Springfield</i>
Dow, William Snow . . . . .	<i>Arlington</i>
Draffin, Harry Alexander . . . . .	<i>Leominster</i>
Durgin, Oliver Kendall P. . . . .	<i>Saco, Me.</i>
Fall, Edward . . . . .	<i>Newton</i>
Farquhar, Robert Jr. . . . .	<i>Gilbertville</i>
Farrington, Curtis William . . . . .	<i>Boston</i>
Fraher, Michael Joseph . . . . .	<i>So. Boston</i>
Grogan, Frederick Thomas . . . . .	<i>W. Swanzey, N. H.</i>
Harris, Leslie Woodbury . . . . .	<i>Natick</i>
Hatch, Theron Harrington . . . . .	<i>Damariscotta, Me.</i>
Hough, Grace Maude . . . . .	<i>Pawtucket, R. I.</i>
Jamieson, Robert Crawford . . . . .	<i>Boston</i>
Kelley, Varney Albert . . . . .	<i>Boston</i>
Lima, Anthony Jacome Travassos . . . . .	<i>Azores</i>
Maguire, John Augustine . . . . .	<i>Dorchester</i>
Mason, Walter Courtlandt . . . . .	<i>Gaysville, Vt.</i>
McInnes, George Francis . . . . .	<i>Boston</i>
Miles, Frank Bruce . . . . .	<i>Up. Maugerville, N. B.</i>
O'Brien, James, Jr. . . . .	<i>Ashland</i>
Pendleton, Irving Erskine . . . . .	<i>Searsport, Me.</i>
Pettengill, Clarence Albert, S.B. . . . .	<i>Hudson</i>
Quinn, Francis Xavier . . . . .	<i>Worcester</i>



Sargent, Sidney Burt . . . . .	<i>Searsport, Me.</i>
Shaw, George Maurice . . . . .	<i>New York, N. Y.</i>
Shay, Joseph William . . . . .	<i>Boston</i>
Shillington, James Henry . . . . .	<i>Lynn</i>
Shooshan, Harry Manoog . . . . .	<i>Boston</i>
Sproul, Frank Wells . . . . .	<i>Bristol, Me.</i>
Staples, Odber Welsley . . . . .	<i>St. John, Canada</i>
Thorburn, Howard Lester . . . . .	<i>Boston</i>
Tobin, Edward William . . . . .	<i>So. Boston.</i>
Wescott, Winfred Francis . . . . .	<i>W. Medford</i>
Wightman, Morse . . . . .	<i>Attleboro</i>
Wren, John Joseph . . . . .	<i>Jamaica Plain</i>

### Junior Class.

Allen, Harry Prescott . . . . .	<i>Cambridge</i>
Ash, Henry . . . . .	<i>No. Weymouth</i>
Askowith, Charles . . . . .	<i>Roxbury</i>
Atwood, Ira Osmyn . . . . .	<i>No. Attleboro</i>
Barron, Wilson Darling . . . . .	<i>Dexter, Me.</i>
Breslin, John Lawrence . . . . .	<i>Woburn</i>
Bodge, Frederick Garfield . . . . .	<i>Tamworth, N. H.</i>
Bonney, Therese Eva . . . . .	<i>Somerville</i>
Brigham, Ernest Phipps . . . . .	<i>Westboro</i>
Brooks, Ernest Robbins . . . . .	<i>Northfield, Vt.</i>
Brosnahan, James Leo . . . . .	<i>Boston</i>
Brown, Charles Drew . . . . .	<i>Somerville</i>
Bruce, Barnett . . . . .	<i>Portland, Me.</i>
Bunker, Jane Graupner . . . . .	<i>New York, N. Y.</i>
Butler, Charles Carter . . . . .	<i>Pittsfield</i>
Centervall, Ivan A. T. . . . .	<i>Helsingborg, Sweden</i>
Chester, Carey Roscoe . . . . .	<i>Malden</i>
Chisholm, Lester Dearborn . . . . .	<i>Bridgewater</i>
Clarke, Charles Peter . . . . .	<i>Ayer</i>
Collins, Stephen Bartholomew . . . . .	<i>Avon</i>
Davis, Joseph Benjamin . . . . .	<i>Bridgton, Me.</i>
Davis, Myrton Omer . . . . .	<i>Worcester</i>
Dearing, Dana Emerson . . . . .	<i>Randolph, Vt.</i>
Dooley, John Henry . . . . .	<i>Boston</i>
Dowd, Thomas Patrick . . . . .	<i>Natick</i>
Fenelon, James Joseph . . . . .	<i>E. Boston</i>
Fowler, Miles Hartley . . . . .	<i>Dorchester</i>
Francis, Melville F. . . . .	<i>Malden</i>
French, Frank Russell . . . . .	<i>Brockton</i>
Gallagher, Charles Aloysius . . . . .	<i>Roxbury</i>

Gibbons, John Joseph . . . . .	<i>Clinton</i>
Gilday, Frank Joseph . . . . .	<i>Everett</i>
Gilpatric, Edgar Frank . . . . .	<i>Biddeford, Me.</i>
Gobie, William Allen . . . . .	<i>Woodstock, Vt.</i>
Gokey, Harry Myers . . . . .	<i>Northfield, Vt.</i>
Goodrich, Lynn Merton . . . . .	<i>Oakland, Me.</i>
Gould, Arthur Richard . . . . .	<i>Brockton</i>
Gowen, Charles Edwin . . . . .	<i>Dover, N. H.</i>
Grant, Walter Henry . . . . .	<i>Cambridge</i>
Griffin, John Joseph . . . . .	<i>Waltham</i>
Harpin, Henry Taylor . . . . .	<i>Windsor, Vt.</i>
Harrison, Henry Hersey . . . . .	<i>So. Boston</i>
Hart, Frederick James . . . . .	<i>Lowell</i>
Heckerman, John Nevin . . . . .	<i>Bedford, Penn.</i>
Hennessy, Thomas, Jr. . . . .	<i>Roxbury</i>
Hill, Hugh Thomas . . . . .	<i>Boston</i>
Hodgdon, Alby Emerson Paige . . . . .	<i>E. Foxboro</i>
Jenkins, George Albert . . . . .	<i>N. Weymouth</i>
Jewett, Elton Sumner . . . . .	<i>Boston</i>
Johnson, Alfred Leo Roy . . . . .	<i>Shelburne Falls</i>
Kennedy, John Joseph . . . . .	<i>Chicopee</i>
Kiley, Robert Delury . . . . .	<i>Salem</i>
King, Jeanette Emma . . . . .	<i>Boston</i>
Lunt, Wilbur True . . . . .	<i>Rochester, N. H.</i>
Luce, Maurice Garfield . . . . .	<i>Haverhill</i>
Lanigan, Francis Jesse . . . . .	<i>Calais, Me.</i>
Logwood, Burt Eugene . . . . .	<i>Boston</i>
Mahoney, George Edward . . . . .	<i>E. Boston</i>
Mahoney, James Francis . . . . .	<i>Waltham</i>
McCarthy, Justin Lawrence . . . . .	<i>Ashland</i>
McCarthy, William Francis . . . . .	<i>Cambridge</i>
McGlew, Charles Kettlewell . . . . .	<i>Salem</i>
McGourty, Frederick William . . . . .	<i>Worcester</i>
MacKeon, John Francis . . . . .	<i>Taunton</i>
MacKinnon, John Russell . . . . .	<i>Dorchester</i>
Manster, James Siemel . . . . .	<i>Roxbury</i>
Mignault, William Theodore . . . . .	<i>Boston</i>
Moderno, Louis . . . . .	<i>Cambridge</i>
Moran, Philip Frederick . . . . .	<i>Somerville</i>
Moran, John James . . . . .	<i>Woburn</i>
Mullin, David Joseph . . . . .	<i>St. John, N. B.</i>
Osborne, Shelley Bancroft . . . . .	<i>Uxbridge</i>
Perrault, Oscar Leon . . . . .	<i>No. Brookfield</i>
Pike, Ezra Barker, Jr. . . . .	<i>Brentwood, N. H.</i>

Preston, Nathaniel Meservey . . . . .	<i>New Hampton, N. H.</i>
Reardon, Joseph Edmund . . . . .	<i>Cambridge</i>
Riley, John Joseph . . . . .	<i>Rockland</i>
Rockett, Joseph Bernard . . . . .	<i>Dorchester</i>
Romanow, Morris Theodore . . . . .	<i>Boston</i>
Romanow, Morris . . . . .	<i>W. Somerville</i>
Rounds, Daniel . . . . .	<i>Saco, Me.</i>
Rund, Charles . . . . .	<i>Boston</i>
Ryder, Joseph Michael . . . . .	<i>So. Boston</i>
Seagrave, Chauncey Wilcox . . . . .	<i>Uxbridge</i>
Shaughnessy, Emma Elizabeth . . . . .	<i>Newtonville</i>
Smith, Harry Monford . . . . .	<i>E. Boston</i>
Smith, Clarence Endicott . . . . .	<i>Fredericton Jct., N.B.</i>
Stetson, Harry Morgan . . . . .	<i>Cohasset</i>
Stegelman, Alfred Gatzor . . . . .	<i>Lewiston, Me.</i>
Story, Ernest Sherman . . . . .	<i>Salem</i>
Strejffert, Thure Gustaf . . . . .	<i>Helsingborg, Sweden</i>
Thomas, Charles Arthur . . . . .	<i>Somerville</i>
Thorburn, Stanley Burton . . . . .	<i>Boston</i>
Ufford, Eugene Urbane . . . . .	<i>Holyoke</i>
Wells, Ernest Leavitt . . . . .	<i>Waltham</i>
Wheeler, George Gilman . . . . .	<i>Providence, R. I.</i>
Whitehouse, Frank Harrison Gower . . . . .	<i>Providence, R. I.</i>
Whittredge, Eugene Alfred . . . . .	<i>Foxcroft, Me.</i>
Wilkinson, Alvin Thomas . . . . .	<i>Providence, R. I.</i>
Young, John Maurice . . . . .	<i>Rockland</i>

### Freshmen

Barton, Allen Gordon . . . . .	<i>Boston</i>
Blagdon, Joseph Michael . . . . .	<i>Charlestown</i>
Brenan, Henry Edward . . . . .	<i>Boston</i>
Carlson, Bertel Gustaf . . . . .	<i>Worcester</i>
Caswell, Fred. Calvin . . . . .	<i>Brockton</i>
Cole, Charles Cummings . . . . .	<i>Boston</i>
Crawford, Arthur Archibald . . . . .	<i>Cambridge</i>
Dickinson, George Granville Parker . . . . .	<i>Harvard</i>
Doonan, Henry Edward . . . . .	<i>Wellesley</i>
Donlan, Lawrence Edward . . . . .	<i>Boston</i>
Dowd, Harry Irving . . . . .	<i>New Britain, Conn.</i>
Dunleavy, John Eugene . . . . .	<i>Uxbridge</i>
Fanning, Arthur Oscar . . . . .	<i>Salem</i>
Finnegan, George Francis . . . . .	<i>Waltham</i>
Fitzgerald, Francis Joseph . . . . .	<i>Somerville</i>
Gately, John Francis . . . . .	<i>No. Grafton</i>

Harris, William Augustus . . . . .	<i>Philadelphia, Pa.</i>
Iskian, Heraut John . . . . .	<i>Boston</i>
Kelly, Louis Lemuel Alfred . . . . .	<i>Charlottetown, P. E. I.</i>
Lariviere, Ulysses Joseph . . . . .	<i>Manvill, R. I.</i>
Lynch, James Joseph . . . . .	<i>So. Boston</i>
Lyons, Joseph Vincent . . . . .	<i>So. Boston</i>
Macomber, Alice Jay . . . . .	<i>New Bedford</i>
Mallette, Francis Ernest . . . . .	<i>Chelsea</i>
MacCorry, Harry Stuart . . . . .	<i>Boston</i>
McKenzie, Lester Steele . . . . .	<i>Cambridge</i>
McTernen, Malcom Bodwell . . . . .	<i>Andover</i>
Marr, Thomas Edward . . . . .	<i>Waltham</i>
Montgomery, William Edward . . . . .	<i>Natick</i>
Morgan, Daniel Joseph . . . . .	<i>So. Boston</i>
Nash, George Page . . . . .	<i>Lewiston, Me.</i>
Nee, Joseph Festus . . . . .	<i>So. Boston</i>
Noonan, Kaen Aloysius . . . . .	<i>Roxbury</i>
Pazeian, Simon Vartan . . . . .	<i>Worcester</i>
Potter, George Edwin . . . . .	<i>Greenwood</i>
Riley, William Henry . . . . .	<i>Woodstock, Vt.</i>
Ross, Phillip Knight . . . . .	<i>Gorham, N. H.</i>
Roy, Emile Alfred . . . . .	<i>Agawam</i>
Searle, Stephen Nourse . . . . .	<i>Bellows Falls, Vt.</i>
Talty, Joseph Edward . . . . .	<i>Woburn</i>
Tuttle, Fred Wilbur . . . . .	<i>Bath, Me.</i>
Thomson, Harry Scott . . . . .	<i>Moncton, N. B.</i>
Wood, Harold Abbott . . . . .	<i>Brockton</i>

### Special Students

Canovan, William Josiah . . . . .	<i>Boston</i>
Lombard, Ralph Gerrish . . . . .	<i>Belfast, Me.</i>
Lawton, James . . . . .	<i>Somerville</i>
Moore, Horace Dwight . . . . .	<i>Lynn</i>
Mullin, Charles Samuel . . . . .	<i>Cambridge</i>
Steward, Charles Gould, A.B. (Harv.) . . . . .	<i>Boston</i>
Taylor, Ernest Bossuet . . . . .	<i>Waltham</i>
Tewksbury, Ralph Montague . . . . .	<i>Woodstock, Vt.</i>
Tunncliffe, Edmund H. . . . .	<i>Boston</i>
Viles, Harold Smith . . . . .	<i>N. New Portland, Me.</i>
White, Henry Anson . . . . .	<i>Dorchester</i>

## The Summer School at Tufts College\*

---

d'Amaral, Joseph, <i>English</i>	
Capen, Ruth Paul, <i>English</i> . . . . .	8 Professors Row
Chapman, Charles Edward, <i>English</i>	
Clark, Alvar Warren, <i>History</i>	
Coffey, William Henry, <i>English</i> . . . . .	Tufts College Post-office
Creeley, Oscar Slade, <i>English and History</i>	
Druley, Elmer Morey, <i>History</i>	
Galarneau, Dennis Camille Amedee, <i>English</i>	
Greene, Harry Marlon, <i>English</i>	
Nason, Robert Edward, <i>English</i>	
Thomas, Harold Asa, <i>English</i> . . . . .	Tufts College
Titcomb, Grace, <i>English</i> . . . . .	Farmington, Me.
Toy, Harvey Marshall, <i>English and History</i>	
Williams, Arthur, <i>English</i>	

---

\* Where specific address is not given, the students were registered undergraduates.



# Summary

## CORPS OF INSTRUCTION

Emeritus . . . . .	2
President and Professors . . . . .	49
Assistant Professors . . . . .	12
Demonstrators . . . . .	3
Instructors . . . . .	46
Lecturers . . . . .	6
Assistants . . . . .	28
Laboratory Assistants . . . . .	19
Total engaged in work of instruction . . . . .	— 165
Other Officers, not previously counted . . . . .	8

## STUDENTS

### COLLEGE OF LETTERS:

Graduate . . . . .	7
Senior . . . . .	41
Junior . . . . .	73
Sophomore . . . . .	85
Freshman . . . . .	92
Special . . . . .	18
	— 316

### DIVINITY SCHOOL:

Graduate . . . . .	2
Fourth Year . . . . .	3
Third Year . . . . .	5
First Year . . . . .	7
	— 17

### MEDICAL SCHOOL:

Fourth Year . . . . .	44
Third Year . . . . .	59
Second Year . . . . .	95
First Year . . . . .	151
Special . . . . .	39
	— 388

### DENTAL SCHOOL:

Senior . . . . .	43
Junior . . . . .	100
Freshman . . . . .	43
Special . . . . .	11
	— 197

### SUMMER SCHOOL AT TUFTS COLLEGE . . . . .

14

### BROMFIELD-PEARSON SCHOOL . . . . .

11

Total number of students . . . . .	943
Names appearing twice . . . . .	10

The following persons carried on work at the Harpswell Laboratory,  
during the Summer of 1902:—

George A. Bates, D.D.S.

*Professor of Histology, Tufts College Medical School*

Grace Farrer, A.B.

*Preceptress, Freedom Academy, Freedom, Maine*

Valeria S. Goodenow, A.B.

*Fellow in Biology, Tufts College*

George B. Gould, A.B.

*Instructor in Biology, Worcester Academy*

Clara E. Ham

*Student, Massachusetts Institute of Technology*

George F. Hubbard

*Instructor, Lawrence Academy, Groton, Mass.*

Mary A. Ingalls, A.B.

*Auburn, Me.*

J. S. Kingsley, Sc.D.

*Professor of Biology, Tufts College*

Arthur B. Lamb, A.B., A.M.

*Student, Harvard University*

F. D. Lambert, Ph.D.

*Instructor in Biology, Tufts College*

Timothy Leary, M.D.

*Professor of Pathology, Tufts College Medical School*

Ralph W. Richards, A.B., A.M.

*Instructor in Geology, Tufts College*

W. S. Sutton, B.S.

*Student, Columbia University*

C. B. Wilson, A.M.

*Professor of Natural Science, Normal School, Westfield, Mass.*

E. B. Wilson, Ph.D., LL.D.

*Professor of Zoology, Columbia University*

Guy M. Winslow, Ph.D.

*Instructor in Science, Lasell Seminary*

Linwood L. Workman, A.B.

*Instructor in Natural Science, Colby Academy, New London, N. H.*

# DEGREES AND HONORS

1901-1902

# Forty-Sixth Annual Commencement

*June 18, 1902*

---

## DEGREES CONFERRED

### *HONORARY*

#### Doctors of Laws

AMOS EMERSON DOLBEAR  
JOHN DAVIS LONG

#### Doctors of Sacred Theology

THEODORE ELMER BUSFIELD  
WILLIAM HENRY RIDER

#### Doctors of Letters

HENRY NEHEMIAH DODGE  
EDWIN GINN  
BYRON GROCE

#### Masters of Arts

SARAH LOUISE ARNOLD  
EDWIN RUTHVEN HOLDEN  
ALBERT METCALF  
WALTER EDWARD PARKER  
JOHN PHILIP SWASEY

### *IN COURSE*

#### Bachelors of Arts

JAMES FRANCIS ALBION (extra ordinem, as of the class of 1887)  
IRNIE EMMA ALLISON  
DANA CLARK BAILEY  
WILLIAM ABRAM BRADE  
JOSEPHINE ROSAMOND BURKE  
RUTH PAUL CAPEN  
RICHARD BRADFORD COOLIDGE  
RUTH BURLEIGH DAME (with Final Honors in English)  
JOSEPH DEXTER DANFORTH  
KINGSBURY FOSTER (extra ordinem, as of the class of 1901)  
FRANK LESLIE HAYFORD  
ISABEL HOLMES (with Final Honors in Latin and Honorable Mention  
in German)

EDNA HENDERSON JOHNSON  
MABEL FRANCES KNIGHT  
SARAH EMILY LOVELL  
FORREST SUMNER LUNT  
BLANCHE ELIZABETH LYON (with Final Honors in German and  
Honorable Mention in French)  
AGNES IRENE McCOY (with Final Honors in Greek)  
ARTHUR HENRY MORSE (with Honorable Mention in Biology)  
ALICE CECILE PAINE  
LAURENCE HOUGHTON PARKER (with Final Honors in Philos-  
ophy)  
MARY BATES PARKER (with Honorable Mention in English)  
EMMA FRANKLIN PAUL  
HERBERT RUSSELL PEIRCE  
LLEWELLYN ROOD PERKINS  
HARRIET ELIZABETH RALLION (with Final Honors in German)  
HELEN MABEL RAMSAY  
BLANCHE ETHEL ROBERTS  
BERNICE GERTRUDE ROBERTS (with Final Honors in Greek)  
ELIZABETH ADAMS RUSSELL (with Honorable Mention in Greek  
and German)  
HENRY MARTIN SHUTE  
EDITH HELEN STOWELL  
MALCOLM EBEN STURTEVANT  
MARIAN LUCY TITUS (with Final Honors in German and English)  
FLORICE ALISON WATKINS (with Final Honors in Political Science)  
ARTHUR GERRY WOODBRIDGE

#### **Bachelors of Philosophy**

HERBERT DALLAS BIXBY  
CHARLES ERNEST MOORS  
JOSEPH GORDON RAY

#### **Bachelors of Science in Civil Engineering**

ROGER WELLINGTON ARMSTRONG  
NATHANIEL CHILD MILLS  
EMIL MONGER SCHNECK  
FORREST ELLIOTT TARR

#### **Bachelors of Science in Electrical Engineering**

WILLIAM WILLIS AUSTIN  
WINTHROP TINGLEY ENDICOTT  
HARRY BRIGHAM HUSSEY  
NATHANIEL CHILD MILLS



HERBERT MORLEY MORLEY  
FREDERICK WILLIAM PATERSON  
HARRISON HERBERT SCHOOLFIELD

**Bachelor of Science in Mechanical Engineering**

ALBERT EVERETT MANCHESTER

**Bachelors of Science in Chemistry**

CLAIR LINCOLN BAKER  
CHARLES WARREN DANFORTH

**Bachelor of Science in Biology**

ELLEN EDDY SHAW (with Honorable Mention in Biology)

**Bachelors of Divinity**

FRED HENRY COLE  
GEORGE WILLIAM COLSON  
WALLACE HATCH  
CHARLES NORMAN MYERS

**Doctors of Medicine**

EVA ARGENE ADAMS  
THOMAS F. ASH  
JOSEPH ASPRAY  
JAMES H. BLAKE, Ph.G.  
HAROLD P. BLODGETT  
ELBERN T. BOWERS Ph.G.  
EDITH MAY BROOKS  
GEORGE HAVEN CLARK  
AUBREY JOHN COLLINS  
SIMON FRANCIS CURRAN (cum laude)  
ELIZA J. DADMAN (extra ordinem, as of the class of 1901)  
HARVEY LOUD ELDRIDGE  
EDWARD KEITH ELLIS  
DANIEL JOSEPH FINEGAN  
ELLIS E. FOSTER, M.D.  
JOHN VINCENT GALLAGHER, A.B.  
MARY EVA GILL (cum laude)  
GEORGE WILLIAM GILLETTE  
FLORENCE GILMAN (summa cum laude)  
CORA ELIZABETH HARRIMAN  
RALPH FRANKLIN HODGDON  
ABRAHAM J. HURWITZ, Ph.G.  
ALICE MAY JACKMAN

ANTIONETTE F. KONIKOW-BUCHOLZ, A.B (cum laude)  
ALICE ESTELLE LILIENTHAL  
LEONARD J. LOEWE, M.D.V.  
JULIAN DYER LUCAS  
CHARLES MALONE (cum laude)  
JOHN MALONE, LL.B.  
MATHILDE M. MASSÉ  
ERNEST ALFRED MAYELL  
RICHARD A. MORGNER, Ph.G.  
CHARLES A. MÜLLER  
FRANK AUGUSTUS MURPHY  
JOSEPH J. O'BRIEN  
MARIE JANETTE DE OLLOQUI  
ERNEST SUMNER OSBORNE  
ALONZO KINGMAN PAINE  
ALBERT MUNRO PARKER, A.B.  
ANNA HOWE PEABODY, A.B.  
LEWIS WAITE PEASE  
WILLARD CHUTE PETERS  
HANNAH CORALYNN SIMMONS  
JAMES F. SMELTZER

**Doctors of Dental Medicine**

EDWARD S. BENNETT  
PLINY W. BERKS  
EDWARD V. BURKE  
JOSEPH H. BUSSEY  
JAMES W. CAIL  
MELVIN C. CANN  
FARQUHAR D. CARTER  
ARTHUR H. CLARK  
BERTHA J. DAVIS  
EDWARD T. FOX  
GILES C. GRANT  
ERNEST W. HOMAN  
IVAN S. KEITH  
FRED E. KING  
ERNEST F. LINCOLN  
MAURICE E. LOCKE  
JAMES P. LOCKHART  
ALEXANDER S. MACLEOD  
EDWARD A. MERRILL  
SAMUEL I. MOODY  
GERDA VON B. PERRY

STEPHEN D. PERRY  
LEWIS J. PIERCE  
SUMNER W. PRATT  
MARK ROMANOW  
FREDERICK P. RUSSELL  
HARRY P. SMALL  
ALBERT L. SMART  
GEORGE A. TEWKSBURY  
JOHN P. THAYER  
CHARLES R. VILES  
ROLLIN E. WELLS

**Masters of Arts**

RICHARD BRADFORD COOLIDGE  
RUTH BURLEIGH DAME  
JOHN EILLS  
EDITH LOUISE HODGE  
ISABEL HOLMES  
RALPH WEBSTER RICHARDS  
HENRY MARTIN SHUTE

**Master of Science**

CHARLES BROWN GRAVES

## Awards of Prizes, 1901-1902

---

### Entrance Examination Prize for 1902

SARA LUCY BUXTON

### Goddard Prize in Mathematics

SETH ARTHUR LORING

### Greenwood Prize Scholarship in Oratory

CHESTER BRADSTREET STORY

### Wendell Phillips Memorial Scholarship

LEON RYDER MAXWELL

### Prize Scholarship of the Class of 1898

EDITH LINWOOD BUSH

### Winners of Prizes in the Annual Debate

THE CAPEN DEBATING CLUB

### Best Individual Debater

ARTHUR WILLIAM COOLIDGE

### Rhetorical Prizes

#### *First Division*

PHILIP MESERVE HAYDEN (1)

BERTHA LOUISE COMSTOCK (2)

#### *Second Division*

CLARENCE ELMORE WATKINS (1)

RICHARD BRADFORD COOLIDGE (2)

#### *Third Division*

RUTH PAUL CAPEN (1)

CHANDLER MASON WOOD (2)

### Greenwood Prizes in Oratory in the Divinity School

WALLACE HATCH

ALFRED ROSCOE MAXWELL

GEORGE ARTHUR MILLER





## PUBLICATIONS OF TUFTS COLLEGE

---

GENERAL CATALOGUE

ANNUAL REPORT OF THE PRESIDENT

CATALOGUE OF THE MEDICAL SCHOOL

CATALOGUE OF THE DENTAL SCHOOL

CATALOGUE OF THE DIVINITY SCHOOL

CATALOGUE OF THE ENGINEERING DEPARTMENT

CATALOGUE OF THE BROMFIELD-PEARSON SCHOOL

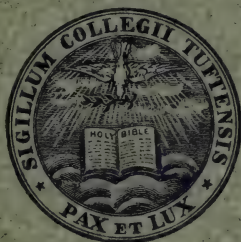
ANNOUNCEMENT OF COURSES




T U F T S  
C O L L E G E  
C A T A L O G U E

---

1903-1904



Published monthly from December to June, inclusive, at Tufts College, Mass., by the Trustees of Tufts College. Copies may be had by addressing the Secretary, HARRY G. CHASE, Tufts College, Mass.

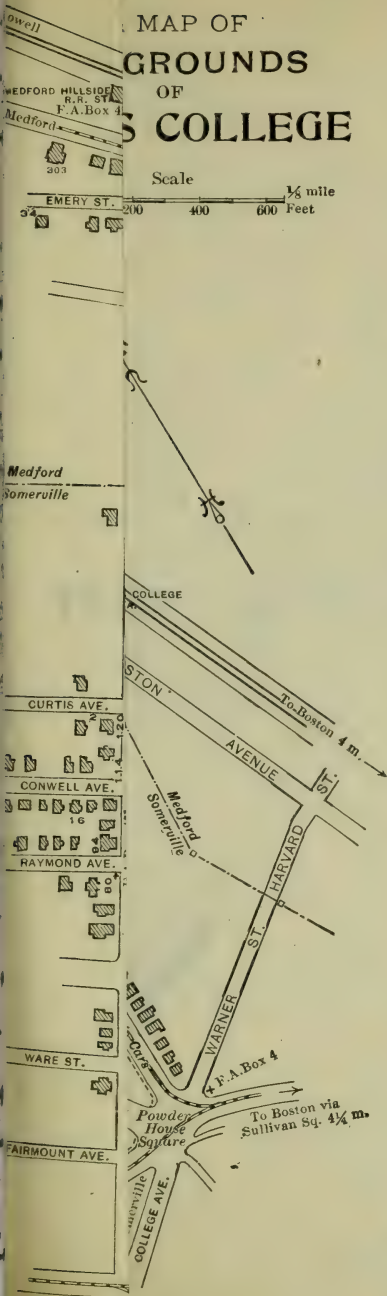
 The post-office address of the College of Letters, the Divinity School, the Department of Engineering, and the Bromfield-Pearson School, is TUFTS COLLEGE, MASS.

The address of the Medical and Dental Schools is 416-430 HUNTINGTON AVENUE, BOSTON, MASS.

# MAP OF GROUNDS OF COLLEGE

Scale

$\frac{1}{8}$  mile  
200 400 600 Feet



## College Buildings

- 1 WEST HALL (dormitory)
- 2 LIBRARY
- 3 EAST HALL (dormitory)
- 4 COMMONS HALL AND POST-OFFICE
- 5 CHEMICAL LABORATORY
- 6 DEAN HALL (dormitory)
- 7 GODDARD GYMNASIUM
- 8 BARNUM MUSEUM (public museum, biological laboratory, and class rooms)
- 9 BALLOU HALL (main offices and class rooms)
- 10 GODDARD CHAPEL
- 11 PAIGE HALL (Divinity School dormitory)
- 12 MINER HALL (Divinity School class rooms)
- 13 ROBINSON HALL (Engineering laboratories and class rooms)
- 14 POWER STATION
- 15 BROMFIELD-PEARSON BUILDING (Engineering shops and class rooms)
- 16 METCALF HALL (dormitory for women)
- 17 START HOUSE (dormitory for women)

## Residences

### PROFESSORS ROW

- 8 Pres. Capen
- 14 Prof. Anthony
- 20 " Lewis
- 28 " Schneider; Prof. Cushman; Dr. Eckstein
- 38 " Durkee
- 72 " Denison
- 80 Zeta Psi House
- 92 Prof. Fay; Prof. Metcalf
- 98 " Bray
- 106 " Tousey
- 114 " Knight
- 124 " Hooper
- 128 " Kingsley
- 134 " Dolbear

### SAWYER AVENUE

- 13 Delta Upsilon House
- 37 Dr. Stroud; Dr. Lambert
- TALBOT AVENUE
- 101 Prof. Shipman; Mr. Ransom
- DEARBORN ROAD

- 16 Prof. Wren
- POWDER-HOUSE BOULEVARD
- 133 Prof. Rockwell

### ELECTRIC AVENUE

- 9 Prof. Earle
- BOSTON AVENUE
- 303 Mr. H. T. Brown
- EMERY STREET

- 34 Mr. Stewart
- CURTIS AVENUE
- 2 Prof. H. G. Chase
- CONWELL AVENUE

- 16 Prof. Wade
- CURTIS STREET

- 80 Prof. Maulsby
- 94 Alpha Tau Omega House
- 114 Prof. Harmon
- 120 Mr. Richards

### PACKARD AVENUE

- 120 Prof. Leonard
- 123 Theta Delta Chi House
- 126 Miss Mellen

### LATIN WAY

- 19 Delta Tau Delta House
- COLLEGE AVENUE
- 184 Prof. Bolles

### NOTE

Post-office address: Tufts College, Mass. Railroad Station: Tufts College, on Southern Division of Boston and Maine Railroad. Electric cars from Boston via Sullivan Square.

The college grounds and professors' residences, comprising one hundred and ten acres, are enclosed on the map within a dotted line.

The main yard and dormitories are on a hill one hundred and fifty feet above sea level, and seventy-five feet above College Avenue.



# A MAP OF THE GROUNDS OF TUFTS COLLEGE



## College Buildings

- 1 WEST HALL (dormitory)
- 2 LIBRARY
- 3 EAST HALL (dormitory)
- 4 COMMONS HALL AND POSTOFFICE
- 5 CHEMICAL LABORATORY
- 6 DEAN'S HALL (dormitory)
- 7 GODDARD GYMNASIUM
- 8 BARNUM MUSEUM (public museum, biological laboratory, and class rooms)
- 9 BALLEW HALL (main offices and class rooms)
- 10 GODDARD CHAPEL
- 11 PAGE HALL (Divinity School dormitory)
- 12 MINER HALL (Divinity School class rooms)
- 13 ROBINSON HALL (Engineering laboratories and class rooms)
- 14 POWER STATION
- 15 BROMFIELD-PEARSON BUILDING (Engineering shops and class rooms)
- 16 METCALF HALL (dormitory for women)
- 17 STARR HOUSE (dormitory for women)

## Residences

- |     | PROFESSORS' ROW                          |
|-----|------------------------------------------|
| 8   | Pres. Capen                              |
| 14  | Prof. Anthony                            |
| 20  | " Lewis                                  |
| 28  | " Schneider; Prof. Cushman; Dr. Eckstein |
| 38  | " Durkee                                 |
| 72  | " Denison                                |
| 80  | Zeta Psi House                           |
| 92  | Prof. Fay; Prof. Metcalf                 |
| 98  | " Bray                                   |
| 106 | " Tousey                                 |
| 114 | " Knight                                 |
| 124 | " Hooper                                 |
| 128 | " Kingsley                               |
| 134 | " Dolbeare                               |
|     | SAWYER AVENUE                            |
| 13  | Delta Upsilon House                      |
| 37  | Dr. Stroud; Dr. Lambert                  |
|     | TALBOT AVENUE                            |
| 101 | Prof. Shipman; Mr. Ransom                |
|     | DEARBORN ROAD                            |
| 16  | Prof. Wren                               |
|     | POWDER-HOUSE BOULEVARD                   |
| 133 | Prof. Rockwell                           |
|     | ELBERT AVENUE                            |
| 9   | Prof. Earle                              |
|     | BOSTON AVENUE                            |
| 303 | Mr. H. T. Brown                          |
|     | EMERY STREET                             |
| 34  | Mr. Stewart                              |
|     | CURTIS AVENUE                            |
| 2   | Prof. H. G. Chase                        |
|     | CONWELL AVENUE                           |
| 16  | Prof. Wade                               |
|     | CURTIS STREET                            |
| 80  | Prof. Mauley                             |
| 94  | Alpha Tau Omega House                    |
| 114 | Prof. Harmon                             |
| 129 | Mr. Richards                             |
|     | PACKARD AVENUE                           |
| 120 | Prof. Leonard                            |
| 123 | Theta Delta Chi House                    |
| 126 | Miss Mellen                              |
|     | LATIN WAY                                |
| 19  | Delta Tau Delta House                    |
|     | COLLEGE AVENUE                           |
| 184 | Prof. Bolles                             |

## NOTE

Post-office address: Tufts College, Mass. Railroad Station: Tufts College, on Southern Division of Boston and Maine Railroad. Electric cars from Boston via Sullivan Square.

The college grounds and professors' residences, comprising one hundred and ten acres, are enclosed on the map within a dotted line.

The main yard and dormitories are on a hill one hundred and fifty feet above sea level, and seventy-five feet above College Avenue.



TUFTS COLLEGE CATALOGUE







PHOTO. BY E. C. HARTSHORN

TUFTS COLLEGE FROM POWDER HOUSE SQUARE

Tufts College Publications  
New Series, Vol. IV, No. 1

# CATALOGUE

OF

# TUFTS COLLEGE



1903—1904

Published in December, 1903, by the Trustees of Tufts College

---

Entered at the Post-Office at Tufts College, Mass.  
as Second Class Matter

THE TUFTS COLLEGE PRESS

H. W. WHITTEMORE & CO.

1903



# Calendar

1903

1904

SEPTEMBER							JANUARY							MAY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30				24	25	26	27	28	29	30	29	30	31				
						31														
OCTOBER							FEBRUARY							JUNE						
				1	2	3		1	2	3	4	5	6				1	2	3	4
4	5	6	7	8	9	10	7	8	9	10	11	12	13	5	6	7	8	9	10	11
11	12	13	14	15	16	17	14	15	16	17	18	19	20	12	13	14	15	16	17	18
18	19	20	21	22	23	24	21	22	23	24	25	26	27	19	20	21	22	23	24	25
25	26	27	28	29	30	31	28	29						26	27	28	29	30		
NOVEMBER							MARCH							JULY						
1	2	3	4	5	6	7		1	2	3	4	5						1	2	
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
29	30						27	28	29	30	31			24	25	26	27	28	29	30
														31						
DECEMBER							APRIL							AUGUST						
		1	2	3	4	5						1	2		1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31			24	25	26	27	28	29	30	28	29	30	31			

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. The post-office address is — TUFTS COLLEGE, MASS.

# Contents

	PAGE		PAGE
PLAN OF THE COLLEGE		Pedagogics . . . . .	74
Grounds (next to front cover).		History and Public Law . . . . .	74
CALENDAR . . . . .	8	Political Science . . . . .	78
HISTORICAL SKETCH . . . . .	10	Mathematics . . . . .	80
The College Charter . . . . .	15	Physics . . . . .	81
Constitution of the Board of Overseers . . . . .	17	Astronomy . . . . .	83
		Chemistry . . . . .	83
<b>ADMINISTRATION</b>		Biology . . . . .	86
TRUSTEES . . . . .	20	Geology . . . . .	88
OVERSEERS . . . . .	21	Mineralogy . . . . .	89
BOARDS OF VISITORS . . . . .	22	Drawing and Shopwork . . . . .	89
OFFICERS OF INSTRUCTION AND GOVERNMENT . . . . .	23	Civil and Mechanical Engineering . . . . .	91
Proctors . . . . .	33	Electrical Engineering . . . . .	92
Russell Lecturer . . . . .	33	Music . . . . .	93
Editors of Tufts College Studies . . . . .	33	The Fine Arts . . . . .	95
Curators of Buildings . . . . .	33	Physical Training . . . . .	95
FACULTY OF ARTS AND SCIENCES		TABULAR VIEW OF PROGRAM HOURS	96
Standing Committees . . . . .	34	COURSES IN SCIENCE (Leading to Degree of S.B.) . . . . .	101
<b>COLLEGE OF LETTERS</b>		General Science . . . . .	101
FACULTY OF THE COLLEGE OF LETTERS . . . . .	37	Biology . . . . .	103
Other Instructors . . . . .	39	Medical Preparatory . . . . .	103
Committees on Promotions . . . . .	39	Chemistry . . . . .	104
Requirements for Admission . . . . .	41	<b>DEPARTMENT OF ENGINEERING</b>	
The Primary Group . . . . .	43	Faculty of the Department of Engineering . . . . .	109
The Secondary Group . . . . .	47	Committee on Promotions . . . . .	110
General Information . . . . .	53	General Information . . . . .	111
REQUIREMENTS FOR DEGREES . . . . .	56	Engineering Courses . . . . .	113
For A.B. . . . .	56	Civil Engineering . . . . .	114
For S.B. . . . .	58	Mechanical Engineering . . . . .	116
DEPARTMENTS OF INSTRUCTION		Electrical Engineering . . . . .	118
(Courses in Liberal Arts) . . . . .	59	Chemical Engineering . . . . .	120
Major Departments . . . . .	59	Mathematics . . . . .	122
English . . . . .	60	Drawing . . . . .	124
Oratory . . . . .	62	Shopwork . . . . .	126
German . . . . .	63	Chemistry . . . . .	128
French . . . . .	65	Physics and Electricity . . . . .	130
Italian . . . . .	66	Engineering—Civil and Mechanical . . . . .	134
Latin . . . . .	66	English . . . . .	140
Greek . . . . .	68	Modern Languages . . . . .	142
Classical Archaeology . . . . .	70	Political Economy . . . . .	142
Hebrew . . . . .	71	Physical Training . . . . .	142
Philosophy . . . . .	71	TABULAR PROGRAM IN ENGINEERING	144

# CONTENTS

7

PAGE

## GRADUATE DEPARTMENT

Faculty of the Graduate Department	151
Standing Committees	152
Instruction	153
Degrees	153
Departments open for A.M.	155
Departments open for Ph.D.	160
Fellowships	161
Scholarships	162
Tuition	162
BUILDINGS AND EQUIPMENT	163
GENERAL INFORMATION	169
Religious Observances	169
Tufts College Studies	169
Registration	170
Program	172
Promotion	172
Major Subjects	172
Admission from other Colleges	173
Special Students	173
Terms and Vacations	174
Absences	174
Expenses	175
Office Hours	177
Scholarships and Other Aids	177
Prizes	181
Committee of Information	183
Honors and Degrees	183

## DIVINITY SCHOOL

FACULTY OF THE DIVINITY SCHOOL	187
Non-Resident Lecturers	188
Committee on Promotions	188
CONDITIONS FOR ADMISSION	189
Requirements for B.D.	189
DEPARTMENTS OF INSTRUCTION	191
SUMMARY	200
GENERAL INFORMATION	202
SCHOLARSHIPS AND AIDS	203

## MEDICAL SCHOOL

FACULTY OF THE MEDICAL SCHOOL	207
Other Instructors	209
Laboratory Assistants	212
Standing Committees	212
Dispensary Staff	213
GENERAL STATEMENT	215
DEPARTMENTS OF INSTRUCTION	215
REQUIREMENTS FOR ADMISSION	231
ADVANCED STANDING	233
PROMOTION	233
REQUIREMENTS FOR GRADUATION	233
Honors	234

PAGE

Outline of Course	234
Examinations	236
Text-books	236
GENERAL INFORMATION	238
Expenses	239
Standing and Certificates	241

## DENTAL SCHOOL

FACULTY OF THE DENTAL SCHOOL	245
Other Instructors	246
Laboratory Assistants	247
Standing Committees	248
GENERAL STATEMENT	249
COURSE OF INSTRUCTION	252
REQUIREMENTS FOR ADMISSION AND	
GRADUATION	259
Examinations	261
Outline of Course	262
Text-books	262
Expenses	263
GENERAL INFORMATION	264

## BROMFIELD-PEARSON SCHOOL

BOARD OF INSTRUCTION	268
GENERAL STATEMENT	269
COURSE OF STUDY	270
GENERAL INFORMATION	272

## SUMMER SCHOOLS

INSTRUCTORS	276
THE SUMMER SCHOOL AT TUFTS COL- LEGE	277
THE HARPSWELL LABORATORY	277

## REGISTER OF STUDENTS

GRADUATE DEPARTMENT	280
COURSES IN ARTS AND SCIENCES	281
Special Students	288
DIVINITY SCHOOL	289
BROMFIELD-PEARSON SCHOOL	290
MEDICAL SCHOOL	291
DENTAL SCHOOL	301
THE SUMMER SCHOOL AT TUFTS COLLEGE	306
SUMMARY	307
REGISTER OF THE HARPSWELL LAB- ORATORY	308

## DEGREES AND HONORS

FORTY-SEVENTH ANNUAL COMMENCE- MENT (Degrees Conferred)	310
Commencement Parts	314
AWARDS OF PRIZES	315

# Calendar

---

## 1903

- SEPT. 17. College year begins (all departments except the Medical and Dental Schools), Thursday morning.
- SEPT. 19. Regular College exercises begin.
- OCT. 4. Russell Lecture, Sunday, 4.30 P.M.
- OCT. 6. Lectures begin in the Medical and Dental Schools, Tuesday.
- NOV. 25. Thanksgiving recess begins, Wednesday, at 1 P.M.
- NOV. 29. Thanksgiving recess ends, Sunday evening.
- DEC. 2. Announcement of Academic Honors, 12 M.
- DEC. 22. Christmas recess begins, Tuesday evening.

## 1904

- JAN. 5. Christmas recess ends, Tuesday evening.
- JAN. 26. Mid-year examinations begin in the College of Letters, Tuesday.
- JAN. 30. Mid-year examinations begin in the Department of Engineering, Saturday.
- FEB. 6. End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
- FEB. 8. Second half-year begins, Monday.
- FEB. 22. Washington's Birthday, Monday. College exercises suspended.
- APRIL 6. Spring recess begins, Wednesday evening.
- APRIL 13. Spring recess ends, Wednesday evening.
- APRIL 19. Patriots' Day, Tuesday. College exercises suspended.
- MAY 13. Goddard Prize Reading in the College of Letters, Friday, 3 P.M.
- MAY 24. Greenwood Prize Reading in the Divinity School, Tuesday, 3 P.M.
- MAY 26. Final examinations for Senior Engineers begin, Thursday.
- MAY 28. Final examinations begin in the College of Letters, Saturday.
- MAY 30. Memorial Day, Monday. College exercises suspended.
- JUNE 3. Final examinations begin for the Department of Engineering (except Seniors), Friday.
- JUNE 10. Class Day, Friday.
- JUNE 12. Baccalaureate Sermon, Sunday, 4.30 P.M.
- JUNE 13. Entrance Examinations at the Medical and Dental Schools, Monday.
- JUNE 15. Forty-eighth Annual Commencement, Wednesday.

**First Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School**

- JUNE 16. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.
- JUNE 17. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.
- JUNE 18. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.
- JUNE 20 to SEPT. 15. Session of the Harpswell Laboratory.
- JUNE 20 to JULY 30. Session of the Summer School at Tufts College.

**Second Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School**

- SEPT. 19. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 1.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.
- SEPT. 20. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.
- SEPT. 21. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.
- SEPT. 22. College year begins, Thursday morning.  
Registration of all students at the Secretary's office.  
Major departments and plans of study for the first half-year must be reported before 4 P.M. of this day.
- SEPT. 24. Regular College exercises begin.
- OCT. 1. Entrance examinations at the Medical and Dental Schools, Saturday.
- OCT. 2. Russell Lecture, Sunday.
- OCT. 4. Lectures begin in the Medical and Dental Schools, Tuesday.
- NOV. 23. Thanksgiving recess begins, Wednesday, at 1 P.M.
- NOV. 27. Thanksgiving recess ends, Sunday evening.
- NOV. 30. Announcement of Academic Honors, 12 M.
- DEC. 22. Christmas recess begins, Thursday evening.

**1905**

- JAN. 5. Christmas recess ends, Thursday evening.
- JAN. 31. Mid-year examinations begin in the College of Letters, Tuesday.
- FEB. 4. Mid-year examinations begin in the Department of Engineering, Saturday.
- FEB. 11. End of the first half-year, Saturday.
- FEB. 13. Second half-year begins, Monday.

## Historical Sketch.

---

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

**The Foundation.**—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to



it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

“No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain.”

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

**The College of Letters.**—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first presi-

dent of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of Electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural

History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the

work in political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Mr. Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

**The Professional Schools.**—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time,



largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

**Administration.**—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

### THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to

determine what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers, to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote



the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

### THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A. B., S. B., or Ph. B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committee, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

THE ADMINISTRATION  
OF THE COLLEGE

## The Trustees

### President

HENRY BREWER METCALF

### Vice-President

THOMAS HENRY ARMSTRONG

### Secretary

HENRY WARREN RUGG, Providence, R. I.  
Boston office, 40 Water St.

### Treasurer

NEWTON TALBOT, 40 Water Street, Boston

### Executive Committee

FREDERICK WILLIAM HAMILTON, *Chairman*

ELMER HEWITT CAPEN	THOMAS HENRY ARMSTRONG
HENRY WARREN RUGG	HENRY DUDLEY WILLIAMS
BYRON GROCE	SUMNER ROBINSON
ALBERT METCALF	THOMAS CUNNINGHAM

### Committee on Finance

WALTER EDWARD PARKER, *Chairman*

WILLIAM WALDEMAR SPAULDING	J. FRANK WELLINGTON
ARTHUR ELLERY MASON	J. ARTHUR JACOBS

### Trustees

TIMOTHY THOMPSON SAWYER, Litt.D.	Boston
NEWTON TALBOT, A.M.	Boston
ELMER HEWITT CAPEN, A.M., D.D., LL.D.	Somerville
CHARLES SCOTT FOBES, A.M.	Portland, Me.
THOMAS HENRY ARMSTRONG, A.M.	Waltham
HENRY WARREN RUGG, D.D.	Providence, R. I.
JOHN COLEMAN ADAMS, A.M., D.D.	Hartford, Conn.
BYRON GROCE, A.M., Litt.D.	Boston
ARTHUR ELMER DENISON, A.B.	Cambridge
HENRY DUDLEY WILLIAMS, A.M.	Boston
WILLIAM OSCAR CORNELL, A.M.	Providence, R. I.
HOSEA WASHINGTON PARKER, A.M.	Claremont, N. H.
WALTER EDWARD PARKER, A.M.	Lawrence
HENRY BREWER METCALF, A.M.	Pawtucket, R. I.

WILLIAM WALDEMAR SPAULDING, A.B. . . . .	Haverhill
DAVID CUMMINGS, A.M. . . . .	Somerville
FRED STARK PEARSON, A.M.M., S.D. . . . .	New York, N.Y.
CHARLES EWELL MORRISON . . . . .	Boston
SUMNER ROBINSON, A.M., LL.B. . . . .	Newton
ALBERT METCALF, A.M. . . . .	Newton
JOHN WILKES HAMMOND, A.B., LL.D. . . . .	Cambridge
FREDERICK WILLIAM HAMILTON, A.M., D.D. . . . .	Boston
J. FRANK WELLINGTON . . . . .	Somerville
WILLIAM ERASTUS GIBBS, A.B., D.D. . . . .	Lawrence
ARTHUR ELLERY MASON . . . . .	Boston
ROBERT ROBBINS ANDREWS, D.D.S. . . . .	Cambridge

---

## The Overseers

### President

WALTER PARKER BECKWITH, A.M., Ph.D.

### Secretary

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

### Term expires in 1904

WILLIAM BRADFORD FRENCH, A.B.

FRANCIS BISHOP HARRINGTON, A.B., M.D.

FRANK OTIS MELCHER, C.E.

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

### Term expires in 1905

WALTER PARKER BECKWITH, A.M., Ph.D.

HENRY BLANCHARD, A.M., D.D.

WILLIAM DAVIS THAYER TREFRY, A.B.

MINTON WARREN, Ph.D., LL.D.

### Term expires in 1906

EDWARD HENRY CLEMENT, A.M.

ARTHUR WINSLOW PEIRCE, Litt.D.

SAMUEL WARREN MENDUM, A.M.

MILTON GERRY STARRETT, A.M.B.

### Term expires in 1907

ALPHONSUS HOLLAND CARVILL, A.M., M.D.

EDWIN GINN, A.M., Litt.D.

FRANK MORTIMER HAWES, A.M.

FRANK THOMAS DANIELS, A.M.B.



**BOARDS OF VISITORS**

[Appointed by the Overseers]

**To the College of Letters**

MILTON GERRY STARRETT, A.M.

WALTER PARKER BECKWITH, A.M., Ph.D.

EDWARD HENRY CLEMENT, A.M.

ARTHUR EVERETT PETERSON, A.M.

HIRAM AUSTIN TUTTLE, A.M.

**To the Divinity School**

ARTHUR WINSLOW PEIRCE, Litt.D.

FRANK MORTIMER HAWES, A.M.

FRANK THOMAS DANIELS, A.M.B.

DWIGHT M. HODGE, D.D.

FREDERICK WILLIAMS PERKINS, B.D., A.M.

**To the Medical School**

ALPHONSUS HOLLAND CARVILL, A.M., M.D.

HORACE PERKINS MACKECHNIE, A.B., M.D.

QUINCY ADAMS SHAW, Jr., A.B.

CHARLES SEDGWICK RACKEMANN, A.M.

WILLIAM LINCOLN PARKER

**To the Dental School**

WILLIAM DAVIS THAYER TREFRY, A.B.

EDWIN GINN, A.M., Litt.D.

QUINCY ADAMS SHAW, Jr., A.B.

CHARLES SEDGWICK RACKEMANN, A.M.

WILLIAM LINCOLN PARKER

**Directors of the Women**

[Appointed by the Trustees]

MRS. MARY LEAVITT CAPEN

MRS. SUSAN PEARSON ANTHONY

MRS. MARY INGRAHAM WREN

## Officers of Instruction and Government\*

---

- ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . 8 Professors Row  
*PRESIDENT, and Professor of Moral Philosophy and Political Economy*
- CHARLES HALL LEONARD, A.M., D.D. . . . . 120 Packard Ave.  
*Goddard Professor of Homiletics and Pastoral Theology, and Dean of  
the Divinity School*
- JEROME SCHNEIDER, Ph.D. . . . . 28 Professors Row  
*Professor of Greek*
- EDWIN CORTLANDT BOLLES, Ph.D., D.D. . . . 184 College Ave.  
*Dickson Professor of English and American History*
- † BENJAMIN GRAVES BROWN, A.M. . . . . 38 Professors Row  
*Walker Professor of Mathematics*
- WILLIAM ROLLIN SHIPMAN, A.M., D.D., LL.D. . 101 Talbot Ave.  
*Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of  
the Faculty of the College of Letters*
- HENRY WATSON DUDLEY, M.D. . . . . Abington  
*Professor of Pathology, Emeritus, and Lecturer on Legal Medicine*
- CHARLES PAINE THAYER, A.M., M.D. Tufts College Medical School  
*Professor of General, Descriptive, and Applied Anatomy, and Secre-  
tary of the Medical and Dental Schools*
- JOHN LEWIS HILDRETH, A.B., M.D., LL.D.  
*Professor of Clinical Medicine, Emeritus* 14 Garden St., Cambridge
- CHARLES DURLIN BRAY, C.E., A.M. . . . . 98 Professors Row  
*Professor of Mechanical Engineering*
- AMOS EMERSON DOLBEAR, M.E., Ph.D., LL.D. 134 Professors Row  
*Professor of Physics and Astronomy*
- ERNEST WATSON CUSHING, A.B., M.D., LL.D.  
168 Newbury St., Boston  
*Professor of Abdominal Surgery and Gynaecology*
- GEORGE MILFORD HARMON, A.M., D.D. . . . . 114 Curtis St.  
*Professor of Biblical Theology*

---

\* The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course.

† Deceased.

- HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston  
*Professor of Hygiene*
- CHARLES ERNEST FAY, A.M., LITT.D. . . . . 92 Professors Row  
*Wade Professor of Modern Languages*
- WILLIAM GEORGE TOUSEY, A.M., D.D. . . . . 106 Professors Row  
*Ryder Professor of Ethics and the Philosophy of Theism*
- GEORGE THOMSON KNIGHT, A.M., D.D. . . . . 114 Professors Row  
*Packard Professor of Christian Theology*
- EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St., Boston  
*Professor of Pulmonary Diseases and Climatology*
- EDGAR OSGOOD KINSMAN, D.D.S. . . . . 15 Brattle Sq., Cambridge  
*Instructor in Clinical Dentistry*
- CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree  
*Professor of General Chemistry*
- WARREN SAMUEL WOODBRIDGE, A.M., B.D. 32 Pearl St., Medford  
*Woodbridge Professor of Applied Christianity*
- 
- Pearson Professor of Geology and Mineralogy*
- JOHN STERLING KINGSLEY, Sc.D. . . . . 128 Professors Row  
*Professor of Biology, and Dean of the Graduate Department*
- ARTHUR MICHAEL, A.M., PH.D. . . . . 44 Mt. Vernon St., Boston  
*Professor of Chemistry*
- MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston  
*Professor of Diseases of the Nervous System*
- HAROLD WILLIAMS, A.B., M.D. \* . . . . 528 Beacon St., Boston  
*Professor of the Theory and Practice of Medicine, and Dean of the  
 Medical and Dental Schools*
- HENRY BECKLES CHANDLER, C.M., M.D.  
*Professor of Ophthalmology* 34 1-2 Beacon St., Boston
- SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.  
 235 Marlborough St., Boston  
*Professor of the Theory and Practice of Dentistry*
- HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury  
*Assistant Professor of the Theory and Practice of Medicine*
- GARDNER WELD ALLEN, A.B., M.D. 419 Boylston St., Boston  
*Assistant Professor of Genito-Urinary Surgery*

---

\* Absent on leave.

- WILLIAM LESLIE HOOPER, A.M., Ph.D. . . . 124 Professors Row  
*Professor of Electrical Engineering*
- JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston  
*Professor of Dermatology*
- BYRON HOWARD STROUT, D.D.S. . . . . Taunton  
*Assistant Professor of Operative Technics, and Instructor in Anaesthesia*
- GARDNER CHACE ANTHONY, A.M. . . . . 14 Professors Row  
*Professor of Technical Drawing, and Dean of the Department of Engineering*
- EDWARD WALTER BRANIGAN, D.D.S.  
*Professor of Clinical Dentistry* 2 Commonwealth Ave., Boston
- FREDERIC MELANCTHON BRIGGS, A.B., M.D.,  
*Professor of Surgery* 31 Massachusetts Ave., Boston
- HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston  
*Assistant Professor of Clinical Medicine*
- JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park  
*Professor of Prosthodontia*
- FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington  
*Professor of Materia Medica and Therapeutics*
- GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Histology*
- EDWARD LAMBERT TWOMBLY, A.B., M.D.  
*Instructor in Clinical Medicine* 406 Massachusetts Ave., Boston
- GEORGE HAMLIN WASHBURN, A.B., M.D.  
*Professor of Obstetrics* 377 Marlborough St., Boston
- ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road,  
*Professor of Medical Chemistry and Toxicology* Chestnut Hill
- GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville  
*Instructor in Prosthetic Dentistry*
- FRED CARVILL MERRILL, D.D.S. . . . . Wollaston  
*Instructor in Prosthetic Dentistry*
- FREDERICK MORTIMER HEMENWAY, D.D.S.  
*Professor of Prosthetic Dentistry* 88 Boylston St., Boston
- WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- HORACE DAVID ARNOLD, A.B., M.D. . . . 427 Beacon St., Boston  
*Professor of Clinical Medicine*

- WILLIAM PRESTON HOUSTON, D.D.S. . . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- HENRY HILDRETH PIPER, D.D.S. . . 71 Sycamore St., Somerville  
*Instructor in Clinical Dentistry*
- GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston  
*Instructor in Otology*
- KARL AUGUST HOCH, M.D. . . . . MacLean Asylum, Waverley  
*Instructor in Neuro-Pathology*
- GEORGE WARTON KANAN, M.D. . . . . 419 Boylston St., Boston  
*Professor of Clinical Gynaecology*
- EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown  
*Professor of Otology*
- EDWARD BINNEY LANE, M.D. . . . . Insane Hospital, Dorchester  
*Professor of Mental Diseases*
- JOHN JENKS THOMAS, A.M., M.D. . . . 88 Bay State Road, Boston  
*Instructor in Neurology*
- WILLIAM ELISHA CHENERY, A.B., M.D.  
*Assistant Professor of Laryngology* . . . 222 Huntington Ave., Boston
- HERBERT ERNEST CUSHMAN, B.D., A.M., PH.D. 28 Professors Row  
*Professor of Philosophy*
- LEO RICH LEWIS, A.M. . . . . . . . . . 20 Professors Row  
*Professor of the History and Theory of Music*
- KNUT JOSEPH LUTTROPP, D.D.S., . . . 419 Boylston St., Boston  
*Demonstrator in Operative Dentistry*
- DAVID LEE MAULSBY, A.M. . . . . . . . . . 80 Curtis St.  
*Professor of English Literature and Oratory*
- FRANK BERRY SANBORN, C.E., M.S.  
*Professor of Civil Engineering* . . . 10 Buena Vista Park, Cambridge
- FRANK WILLIAMS DURKEE, A.M. . . . . . 38 Professors Row  
*Professor of Inorganic Chemistry*
- JOHN WOOD FORBES, D.D.S. . . . . . 419 Boylston St., Boston  
*Instructor in Clinical Dentistry*
- EDMUND CHANNING STOWELL, A.B., M.D.  
. . . . . 9 Massachusetts Ave., Boston  
*Assistant Professor of Children's Diseases*
- RICHARD FITCH CHASE, M.D. . . . . 246 Huntington Ave., Boston  
*Instructor in Clinical Medicine, and Lecturer on Gastro-Intestinal Diseases*

THEODORE CHARLES ERB, M.D. . . . 159 St. Botolph St., Boston  
*Instructor in Obstetrics*

ROBERT WORTHINGTON HASTINGS, A.M., M.D.  
*Instructor in the Theory and Practice of Medicine, and Assistant in  
 Pediatrics* The Beaconsfield, Brookline

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury  
*Instructor in Pathology and Bacteriology*

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury  
*Demonstrator of Anatomy*

GEORGE VAN NESS DEARBORN, A.M., Ph.D., M.D.  
*Assistant Professor of Physiology* 150 St. Botolph St., Boston

WARREN FISHER GAY, A.B., M.D. . . 416 Marlborough St., Boston  
*Instructor in Surgery, and Assistant in Anatomy*

EDWARD HENRY ROCKWELL, S.B. 133 Powder House Boulevard,  
*Assistant Professor of Civil Engineering* Somerville

EDWARD ELIPHALET THORPE, M.D. 711 Boylston Street, Boston  
*Instructor in Medical Chemistry*

DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston  
*Instructor in Clinical Gynaecology*

WILLIAM KENDALL DENISON, A.M. . . . . 72 Professors Row  
*Professor of the Latin Language and Literature*

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston  
*Instructor in Clinical Surgery*

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury  
*Professor of Pathology and Bacteriology*

CHARLES FAIRBANK PAINTER, A.B., M.D.  
*Assistant Professor of Orthopedic Surgery* 86 Bay State Road, Boston

JOHN LINCOLN AMES, M.D. . . . . 72 Chestnut St., Boston  
*Assistant Professor of Clinical Medicine*

CHARLES HARRIS CHASE, S.B. . . . . Stoneham  
*Assistant Professor of Steam Engineering*

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston  
*Instructor in Materia Medica and Therapeutics*

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham  
*Instructor in Clinical Dentistry*



RICHARD FROTHINGHAM O'NEIL, A.B., M.D.

416 Marlborough St., Boston

*Demonstrator of Surgical Apparatus and Bandaging*

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.

*Assistant Professor of Physics, and Secretary of the Faculty of Arts and Sciences*

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston

*Instructor in Clinical Dentistry*

JOHN SHEPARD MAY, M.D. . . . . 495 Warren St., Roxbury

*Instructor in Obstetrics, and Assistant in Clinical Medicine*

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston

*Instructor in Gynaecology and Abdominal Surgery*

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston

*Assistant Professor of Ophthalmology*

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park

*Instructor in Clinical Dentistry*

SAMUEL CHANDLER EARLE, A.M.

*Assistant Professor of English* 9 Electric Avenue, West Somerville

LAWRENCE BOYD EVANS, PH.D. . . . . 2 Dean Hall

*Professor of History*

HAROLD JOHN TURNER, PH.D. . . 33 Emery St., Medford Hillside

*Instructor in Chemistry*

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston

*Instructor in Obstetrics*

FRED DAYTON LAMBERT, A.M., PH.D. Allen House, Tufts College

*Instructor in Natural History*

HENRY CLAYTON METCALF, A.B., PH.D. . . . 92 Professors Row

*Jackson Professor of Political Science*

CHARLES CRAWFORD STROUD, A.B., M.D.

*Medical Director of the Gymnasium, and Instructor in Physical Training* Allen House, Tufts College

CHARLES ST. CLAIR WADE, A.M. . . . . 16 Conwell Ave.

*Professor of the Greek Language and Literature*

THOMAS WHITTEMORE, A.B. . . . . ΘΔΧ House, Tufts College

*Assistant Professor of English, and Instructor in the History of Art*

WALTER FORSYTHE WINCHESTER, D.D.S.

*Instructor in Prosthetic Dentistry*

372 Boylston St., Boston

- WILLIAM MARTIN FLYNN, D.D.S. . . . 474A Broadway, So. Boston  
*Instructor in Clinical Dentistry*
- FRANK GEORGE WREN, A.M. . . . . 16 Dearborn Road  
*Professor of Mathematics*
- ELWOOD TRACY EASTON, M.D. . . . . 603 Tremont St., Boston  
*Instructor in Ophthalmology*
- OSKAR ECKSTEIN, PH.D., P.D. . . . . 28 Professors Row  
*Instructor in Chemistry*
- HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury  
*Instructor in Obstetrics*
- HARRY CALDWELL PARKER, M.D. 382 Commonwealth Ave., Boston  
*Instructor in Ophthalmology*
- OLGA CUSHING-LEARY, M.D. . . . . Cushing Hospital, Roxbury  
*Instructor in Pathology and Bacteriology*
- FRANK PERCIVAL WILLIAMS, M.D. . . 419 Boylston St., Boston  
*Instructor in Rectal Diseases*
- HARRY HOMER GERMAIN, M.D. . . . . 173 Beacon St., Boston  
*Instructor in Clinical Surgery*
- LUTHER GORDON PAUL, M.D. . . . . 10 Exeter St., Boston  
*Instructor in Clinical Surgery*
- WILLIAM RICHARD RANSOM, A.M. . . . . 101 Talbot Ave.  
*Instructor in Mathematics*
- FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston  
*Instructor in Electro-Therapeutics and Haematology*
- GEORGE FRANCIS ASHLEY . . . . . 11 Laurel St., Somerville  
*Instructor in Drawing*
- LIZZIE MAUD CARVILL, A.B. . . . . 28 Highland Ave., Somerville  
*Instructor in Physical Training for Women*
- WILLIAM ARNOLD COLWELL, A.M. . 17 Conant Hall, Cambridge  
*Instructor in German*
- RALPH WEBSTER RICHARDS, A.M. . . . . 120 Curtis St.  
*Instructor in Geology*
- EDWIN BUTLER ROLLINS, B.S. . . . . 1 West Hall  
*Instructor in Electrical Engineering*
- CHARLES EDWARD STEWART, S.B.  
*Instructor in Shopwork* . . . . . 34 Emery St., Medford Hillside

## LECTURERS, ASSISTANTS, AND OTHERS

- WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham  
*Lecturer on Operative Dentistry*
- WILLIAM EASTMAN FAY, A.B., M.D. 366 Commonwealth Ave., Boston  
*Assistant in Clinical Medicine*
- ARTHUR PATTERSON CHADBURN, A.B., M.D.  
*Assistant in Clinical Medicine* 225 Marlborough St., Boston
- CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston  
*Assistant in Clinical Medicine*
- EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston  
*Assistant in Clinical Gynaecology*
- ELMOND ARTHUR BURNHAM, A.B., M.D.  
*Assistant in Clinical Medicine* 154 Huntington Ave., Boston
- ARTHUR WILLARD FAIRBANKS, M.D.  
*Assistant in Clinical Medicine* 362 Commonwealth Ave., Boston
- ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester  
*Assistant in Clinical Medicine*
- HENRY FOWLER RANSFORD WATTS, M.D.  
*Assistant in Clinical Medicine* 6 Monadnock St., Boston
- FREDERICK WARREN PEARL, A.B., M.D.  
*Instructor in Operative and Clinical Surgery, and Assistant Demon-*  
*strator of Anatomy* Hotel Vendome, Commonwealth Ave., Boston
- CHARLES BALFOUR DARLING, A.B., M.D.  
*Assistant in Clinical Gynaecology* 27 Rockville Park, Roxbury
- JOHN PETER TREANOR, M.D. . . . 3 Howes St., Dorchester, Mass.  
*Assistant in Clinical Medicine*
- WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston  
*Assistant in Clinical Gynaecology*
- WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park  
*Assistant in Anatomy*
- ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain
- THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury  
*Assistant in Clinical Medicine*
- JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Harvard St., Brookline  
*Assistant in Clinical Medicine*

- JOHN SCOTT McLEOD, M.D. . . . . 130 Warren St., Roxbury  
*Assistant in Anatomy*
- WILLIS JOHNSON MIDDLETON, M.D. 66½ Washington St., Quincy  
*Assistant in Anatomy*
- ALONZO KINGMAN PAINE, M.D. . . . . 69 Gainsboro St., Boston  
*Prosecutor in Anatomy*
- WILLARD CHUTE PETERS, M.D. . . . . Boston City Hospital  
*Assistant in Clinical Surgery*
- ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St., Boston  
*Assistant in Orthopedics*
- WILLIAM HYDE PRICE, A.M. . . . . 87 Hammond St., Cambridge  
*Lecturer in Political Science*
- FREDERICK WINSLOW STETSON, A.B., M.D.  
*Assistant in Clinical Medicine* . . . . . Columbia Road, Dorchester
- PHILIP MESERVE HAYDEN, A.B. . . . . Dean Hall, 6  
*Instructor in French*
- ARTHUR MURPHY, JR., A.B. . . . . Dean Hall, 8  
*Assistant in Chemistry*
- CHESTER BRADSTREET STORY, A.B., . . . . . Dean Hall, 1  
*Assistant in English*
- CHANDLER MASON WOOD, A.M. . . . . West Hall, 19  
*Assistant in History*
- JOHN BLACKLER ABBOTT . . . . . East Hall, 1  
*Assistant in Chemistry*

### Divinity School

- FREDERICK W. HAMILTON, A.M., D.D. . . . . Roxbury
- HENRY W. RUGG, D.D. . . . . Providence, R. I.
- BYRON GROCE, A.M., Litt.D. . . . . Roxbury
- HAROLD WILLIAMS, M.D. . . . . Boston
- CHARLES CONKLIN, A.M., B.D. . . . . Boston  
*Lecturers*

## Laboratory Assistants

L. MARY-BELLE HOLT, B.L. . . . .	Portland, Me.
HORACE G. WHEATON . . . . .	Cambridge
CARL R. O'BRIEN . . . . .	Chelsea

*Anatomy*

EDISON W. BROWN . . . . .	Dorchester
JOHN M. KELLEY . . . . .	Dorchester
LEON S. A. MEDALIA . . . . .	Boston

*Pathology and Bacteriology*

LEO T. MYLES . . . . .	Cambridge
FRANKLIN WELLES . . . . .	Boston
GUY M. WINSLOW . . . . .	Newton

*Histology*

FREEMAN A. TOWER . . . . .	Sterling Junction
MARGARET E. CARLEY . . . . .	Winthrop
SYDNEY C. HARDWICK . . . . .	Quincy
SOLON W. PETERS . . . . .	Sterling

*Physiology*

LUTHER G. DEARBORN, JR., A.B. . . . .	Somerville
CLARK K. PETERSON . . . . .	E. Boston
W. DACRE WALKER . . . . .	Peabody
FRANK W. ROGERS . . . . .	Dedham
CHARLES H. YOUNG . . . . .	Woburn

*Medical Chemistry*

THOMAS W. MURPHY . . . . .	Lawrence
ADELINE F. DUNHAM . . . . .	Boston
CORNELIUS A. SULLIVAN . . . . .	Everett
JOSEPH A. MEEHAN . . . . .	Lowell
CUSHMAN DAY . . . . .	Boston

*General Chemistry*

JOHN J. GIBBONS . . . . .	Clinton
WILLIAM A. DUTCHER . . . . .	Boston

*Pharmacology*

## Other Officers

MARY WRIGHT RICHARDSON . . . . .	Boston
<i>Clerk in Dental Infirmary</i>	

SARAH ELIZABETH MILLER . . . . .	Boston
<i>Clerk in the Prosthetic Department</i>	

FRANCES WILDER . . . . .	Boston
<i>Matron in the Dental Operating Room</i>	

## OTHER OFFICERS

HERBERT TRUE BROWN . . . . .	Tufts College
<i>Bursar</i>	
HARRY GRAY CHASE, B.S. . . . .	2 Curtis Ave.
<i>Registrar</i>	
HELEN LOUISE MELLEN . . . . .	126 Packard Ave.
<i>Librarian.</i>	
ETHEL MUNROE HAYES, A.B. . . . .	252 Medford St.
<i>Assistant Librarian</i>	
KATHARINE LOUISE STEBBINS, A.B. . . . .	30 Day St.
<i>Assistant to the Secretary of the College of Letters</i>	
CHARLES CRAWFORD STROUD, A.B., M.D.	
<i>Director of the Gymnasium</i>	Allen House, Sawyer Avenue
SHERBURNE HILL . . . . .	Δ T House
<i>Assistant in Physical Training</i>	
EDWIN HENRY BENNETT . . . . .	16 Lovell St.
<i>Superintendent of Buildings</i>	
MRS. HARRIET ANNA TURNER	
<i>Matron of Metcalf Hall</i>	
MRS. JENNIE LOUISE PUFFER	
<i>Matron of Start House</i>	

## Proctors

CHANDLER M. WOOD . . . . .	West Hall, 19
EDWIN B. ROLLINS . . . . .	West Hall, 4
PHILIP M. HAYDEN . . . . .	Dean Hall, 6
FRED W. THYNG . . . . .	East Hall, 11

## Russell Lecturer, 1904

HERBERT ERNEST CUSHMAN, Ph.D. . . . .	Tufts College
---------------------------------------	---------------

## TUFTS COLLEGE STUDIES

## Board of Editors

THE PRESIDENT, *Ex-Officio*

Professor Wade  
Professor Knight

Professor Dolbear  
Professor Kingsley

## CURATORS OF BUILDINGS

Chapel . . . . .	Professor Lewis
Ballou Hall . . . . .	Professor H. G. Chase
Barnum Museum . . . . .	Professor Kingsley
Gymnasium . . . . .	Dr. Stroud
Miner Hall . . . . .	Dean Leonard
Library . . . . .	Miss Mellen
Robinson Hall . . . . .	Professor Hooper
Chemical Laboratory . . . . .	Professor Michael
Bromfield-Pearson Building . . . . .	Professor Anthony



# Standing Committees

## OF THE FACULTY OF ARTS AND SCIENCES \*

---

ADMISSIONS: Professor Denison, *Chairman*; Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase; Professors Wade, Fay, Lewis, Maulsby, Evans, Wren, Durkee, Dolbear, and Kingsley.

ABSENCES AND PETITIONS: Dean Shipman, *Chairman*; Deans Leonard and Anthony; Sec'y H. G. Chase.

SCHOLARSHIPS AND AIDS: President Capen, *Chairman*; Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase.

LIBRARY: Dean Shipman, *Chairman*; Professors Hooper, Knight, Metcalf, and Wade.

PROGRAM: Professor Lewis, *Chairman*; Professors Anthony and Knight, Assistant Professor H. G. Chase.

EXAMINATIONS: Professor Metcalf, *Chairman*; Professors Anthony and Denison.

CATALOGUE: Professor Maulsby, *Chairman*; Professor Anthony, and Dr. Williams (of the Medical School).

BOOKS AND SUPPLIES: Professor Lewis, *Chairman*; Professors Durkee, Anthony, and Wren.

MEMBERS ON THE PART OF THE FACULTY OF ARTS AND SCIENCES OF THE BOARD OF DIRECTORS OF ATHLETICS: Professor Wren, *Chairman*; Dr. Stroud, and Professor Harmon.

STUDENT ORGANIZATIONS: Professor Lewis, *Chairman*; Professors Knight, Denison, and Hooper, and Dr. Stroud.

INFORMATION: Professor Cushman, *Chairman*; Professors Denison and Wren.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman*; Professors Wren and Leonard, and Dr. Stroud.

---

\* The Faculty of Arts and Sciences consists of the Faculties of the College of Letters, the Department of Engineering, the Graduate Department, and the Divinity School, constituting one body for the discharge of certain administrative functions.

THE  
COLLEGE OF LETTERS



## Faculty of the College of Letters

---

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT

*Professor of Moral Philosophy and Political Economy*

WILLIAM R. SHIPMAN, A.M., D.D., LL.D., DEAN

*Goldthwaite Professor of Rhetoric, and Professor of Logic*

HARRY G. CHASE, B.S., SECRETARY

*Assistant Professor of Physics*

CHARLES H. LEONARD, A.M., D.D.

*Goddard Professor of Homiletics and Pastoral Theology*

JEROME SCHNEIDER, PH.D.

*Professor of Greek*

EDWIN C. BOLLES, PH.D., D.D.

*Dickson Professor of English and American History*

BENJAMIN G. BROWN, A.M.\*

*Walker Professor of Mathematics*

AMOS E. DOLBEAR, M.E., PH.D., LL.D.

*Professor of Physics and Astronomy*

GEORGE M. HARMON, A.M., D.D.

*Professor of Biblical Theology*

CHARLES E. FAY, A.M., LITT.D.

*Wade Professor of Modern Languages*

WILLIAM G. TOUSEY, A.M., D.D.

*Professor of Ethics and the Philosophy of Theism*

GEORGE T. KNIGHT, A.M., D.D.

*Packard Professor of Christian Theology*

WARREN S. WOODBRIDGE, B.D., A.M.

*Woodbridge Professor of Applied Christianity*

J. STERLING KINGSLEY, S.D.

*Professor of Biology*

ARTHUR MICHAEL, A.M., PH.D.

*Professor of Chemistry*

---

\* Deceased.

HERBERT E. CUSHMAN, B.D., A.M., Ph.D.

*Professor of Philosophy*

LEO R. LEWIS, A.M.

*Professor of the History and Theory of Music*

DAVID L. MAULSBY, A.M.

*Professor of English Literature and Oratory*

FRANK B. SANBORN, C.E., M.S.

*Professor of Civil Engineering*

FRANK W. DURKEE, A.M.

*Professor of Inorganic Chemistry*

WILLIAM K. DENISON, A.M.

*Professor of the Latin Language and Literature*

LAWRENCE B. EVANS, Ph.D.

*Professor of History.*

HENRY C. METCALF, A.B., Ph.D.

*Jackson Professor of Political Science*

CHARLES ST. CLAIR WADE, A.M.

*Professor of the Greek Language and Literature*

FRANK G. WREN, A.M.

*Professor of Mathematics*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English, and Instructor in the History of Art*

WILLIAM R. RANSOM, A.M.

*Assistant Professor of Mathematics*

FRED D. LAMBERT, A.M., Ph.D.

*Instructor in Natural History*

CHARLES C. STROUD, A.B., M.D.

*Instructor in Physical Training*

WILLIAM A. COLWELL, A.M.

*Instructor in German*

RALPH W. RICHARDS, A.M.

*Instructor in Geology*

OSKAR ECKSTEIN, Ph.D., P.D.

*Instructor in Chemistry*

## OTHER INSTRUCTORS

HAROLD J. TURNER, PH.D.

*Instructor in Chemistry.*

LIZZIE MAUD CARVILL, A.B.

*Instructor in Physical Training for Women*

WILLIAM H. PRICE, A.B.

*Lecturer in Political Science*

SHERBURNE HILL

*Assistant in Physical Training*

JOHN B. ABBOTT

*Assistant in Chemistry*

ARTHUR MURPHY JR., A.B.

*Assistant in Chemistry*

CHESTER B. STORY, A.B.

*Assistant in English*

CHANDLER M. WOOD, A.M.

*Assistant in History*

---

COMMITTEE ON PROMOTIONS

Dean Shipman, *Chairman*; Professors Knight, Durkee, Wade, and Denison.





## Requirements for Admission

---

Candidates will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

Candidates for the degree of Bachelor of Arts and of Bachelor of Divinity will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group:—

### The Primary Group \*

Elementary English;  
An Elementary Foreign Language, ancient or modern;  
Elementary History;  
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.
2. No subject classified as “advanced” shall be offered without the corresponding elementary subject; nor shall any language subject be counted as “elementary” in both the Primary and the Secondary Group.

---

\* For detailed statement of the requirements in the Primary and the Secondary Group, see pages 43 to 53.

The Secondary subjects and their assigned units are as follows:—

•  
**The Secondary Group**

ELEMENTARY	ADVANCED
Greek, 4	English, 2
Latin, 6	Greek, 2
French, 4	Latin, 2
German, 4	French, 2
Chemistry, 1	German, 2
Physics, 1	History, 2
Botany, 1 or 2	Advanced Algebra, 1
Zoology, 1 or 2	Trigonometry, 1
Geology, 1 or 2	Solid Geometry, 1
Physiology, 1 or 2	Chemistry, 2
	Physics, 2

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

**Engineering: the Primary Group**

Elementary English ;  
 \*One Elementary Foreign Language ;  
 Algebra ;  
 Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:—

**Engineering: the Secondary Group**

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 41 to 51.

\* Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in engineering on the conditions stated on page 142.

## The Primary Group

### I. Elementary English.\*

1. *Reading and Practice*.—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's *Merchant of Venice* and *Julius Caesar*; the *Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Rime of the Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; George Eliot's *Silas Marner*.

For 1906, 1907, 1908.—Shakespeare's *Macbeth* and the *Merchant of Venice*; The *Sir Roger de Coverley Papers* in *The Spectator*; Irving's *Life of Goldsmith*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe* and *The Lady of the Lake*; Tennyson's *The Passing of Arthur*, and one of the three *Idyls*, *Elaine*, or *Enid*, or *Gareth and Lynette*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice*.—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to ex-

\* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

press his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

For 1906, 1907, 1908.—Shakespeare's *Julius Caesar*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*; Lincoln's *Gettysburg Address*.

## II. One of the following Languages:

### I. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch, *Das Jahr 1813*; Schiller, *Der dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(b) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced

German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

## 2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(b) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

## 3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(a) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(b) A thorough examination on Cicero's Oration against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.



## 4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(a) The translation at sight of passages of simple Attic prose.

(b) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

## III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

*While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.*

*This does not necessarily imply any increase in the time devoted to Greek and Roman history.*

3. The history of England, with due reference to social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States.

Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

*It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.*

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

#### IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(a) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(b) Plane Geometry, including the solution of simple original exercises and numerical problems.

### The Secondary Group

The subjects and their values in entrance units are as follows:—

#### I. Advanced English.

*Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

**II. Elementary German.***Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

**III. Elementary French.***Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

**IV. Elementary Latin.***Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

**V. Elementary Greek.***Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

**VI. Advanced German.***Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (a). At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to

follow a recitation conducted in German and to answer in that language questions asked by the instructor.

**VII. Advanced French.**

*Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(b) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

**VIII. Advanced Latin.**

*Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(a) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(b) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should in-

clude Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

**IX. Advanced Greek.**

*Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(a) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(b) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books in Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

**X. Advanced History.**

*Two entrance units.*

One of the following:—

1. The History of Greece and Rome, as described on page 46, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 46, for those only who have offered Greek and Roman History as primary subjects.



3. The History of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a detailed study of a limited period within that field.

Each of these subjects requires one year's study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

### XI. Advanced Mathematics.

1. Plane Trigonometry, with its applications. *One entrance unit.*
2. Solid Geometry. *One entrance unit.*
3. Advanced Algebra. *One entrance unit.*

### XII. Physics.

(a) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(b) ADVANCED. *Two entrance units.* In addition to (a), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Burgin's Text Book of Physics.

### XIII. Chemistry.

(a) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory note-book.

(b) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book men-



tioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

#### **XIV. Natural History.**

*One or two entrance units.*

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Leconte, Scott, Tarr.

#### **XV. Freehand Drawing.**

*One entrance unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

**XVI. Mechanical Drawing.**

*One entrance unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in this respect. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in this subject only on examination.

**XVII. Shopwork.**

*One entrance unit.*

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced study is given in this subject only on examination.

**GENERAL INFORMATION RELATING TO ADMISSION**

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 6 and 7.

At the regular examination in June those who will be candi-

dates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.


Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

**Admission by Certificate.**—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools of New England that have been approved by the New England College Entrance Certificate Board, and from such others as have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must contain complete answers to such questions as may be proposed by the several examiners.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year.

Blank forms for certificates will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

 Beginning January 1, 1904, certificates from New England schools will be accepted only from those schools that have been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Amherst College, Boston University, Bowdoin College, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, the University of Maine, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board*, Professor N. F. Davis, 159 Brown St., Providence, R. I.

## Requirements for Degrees

---

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Students determine the general direction of their work by the choice of major department. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

### SYNOPSIS OF THE REQUIREMENTS FOR A.B.\*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

---

\* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

(2) The program of prescribed studies is as follows:—

	TERM HOURS
LANGUAGES (Latin, Greek, French, German, Hebrew : each student to take <i>three</i> ) . . . . .	18
ENGLISH . . . . .	6
MATHEMATICS . . . . .	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology ; each student to take <i>one or two</i> ) . . . . .	12
MENTAL AND MORAL SCIENCE* (each student to take <i>three</i> ) . . . . .	12
PHYSICAL TRAINING . . . . .	2
A total of . . . . .	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(3) The program of the student in the first year will be made up from the prescribed groups.

(4) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(5) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject : that is, subjects tending to strengthen and assist his work in his major.

(6) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty-six, unless, as occasionally happens, the same work counts

\* Of the five subjects, Logic, the History of Philosophy, Political Science, History, and Public Law, the student must take at least three—three term hours of each. The remaining three term hours may be chosen from the two other subjects or from the advanced work in the three subjects at first selected.



both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

(7) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

### Summary

	TERM HOURS
Prescribed work . . . . .	56
Major department . . . . .	18
Collateral subjects . . . . .	18
Elective * . . . . .	36
	<hr/> 128

### For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

---

\* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (6), above.

THE  
JOHN CRERAR  
LIBRARY



BALLOU HALL.

# Departments of Instruction

---

## MAJOR DEPARTMENTS

Any of the following may be chosen as major departments :

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

---

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. Subjects count in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by figures in parenthesis following the proposed hour: thus (1) means "first half-year," (2) means "second half-year."

Subjects marked with an asterisk (\*) will not be counted for honors. Subjects marked with a double asterisk (\*\*) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours accompanies the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

### ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND ASSISTANT  
PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

### SUBJECTS

\*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45. (1)*

PROFESSOR MAULSBY AND MR. STORY.

\*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45. (2)*

ASSISTANT PROFESSOR WHITTEMORE AND MR. STORY.

\*8. The Theory and Practice of Composition. Text-book, themes, conferences. *Three hours, to be arranged.* (1) PROFESSOR SHIPMAN.

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

\*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. *Tu., Th., 3.00.* (1) *Counting as three hours.* PROFESSOR SHIPMAN.

7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45.* (2) PROFESSOR MAULSBY.

[10. The English Bible. *Mon., Wed., Fri., 11.45.*  
ASSISTANT PROFESSOR WHITEMORE.]

[\*11. General View of English Literature. Lectures, papers, and required reading. *Mon., Fri., 2.00.*  
PROFESSOR MAULSBY, ASSISTANT PROFESSOR WHITEMORE, AND PROFESSOR KNIGHT.]

English 11 is designed as an introduction to the study of special periods.

[\*\*12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.* PROFESSOR MAULSBY.]

English 12 will be given in 1904-1905.

13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (1) PROFESSOR MAULSBY.

14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Tu., Th., Sat., 8.45.* (2)  
PROFESSOR MAULSBY.

15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* ASSISTANT PROFESSOR WHITEMORE.

16. Milton and his Time. Lectures, readings, brief critical essays. *Tu., Th., Sat., 10.45.* (1) ASSISTANT PROFESSOR WHITEMORE.

[17. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR MAULSBY.]

[18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (2)  
ASSISTANT PROFESSOR WHITEMORE.]

English 17 should precede English 18.

19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems. *Mon., Wed., Fri., 10.45.*  
PROFESSOR MAULSBY.

English 19 may be dropped at the end of the first half-year.



[\*\*20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, *Beowulf* will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and composition. *First half-year. Counting as three hours.* ASSISTANT PROFESSOR WHITEMORE.

24. History of English Criticism. Discussion, essays. *Tu., Th., Sat., 11.45. (2)* PROFESSOR SHIPMAN.

25. Development of the English Drama. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.]

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon-preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

[28. Seminary in English Literature.]

## ORATORY

ASSISTANT PROFESSOR WHITEMORE

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for carrying farther the reading of literature, or of preparing and delivering original speeches. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

1. Study of the Voice; Enunciation and Pronunciation; Attitude and Gesture. *Th., 2.00.* ASSISTANT PROFESSOR WHITEMORE.

2. Reading of Standard Prose and Verse. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

6. The Preparation and Delivery of Original Speeches. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

- [7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th., 2.00.* (2)

PROFESSOR MAULSBY.]

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

8. Extemporaneous Speaking. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

Oratory 8 is open to those who have taken Oratory 6.

## GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

#### SUBJECTS

\*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Mon., Wed., Fri., 9.45.* MR. COLWELL.

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

\*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Baumbach, *Der Schwiegersohn*; Gerstäcker, *Irrfahrten*; Seume, *Mein Leben*; Ebner-Eschenbach, *Die Freiherren von Gemperlein*. *Mon., Wed., Fri., 8.45.* MR COLWELL.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

\*\*3. First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, *Minna von Barnhelm*; Schiller, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*. *Tu., Th., Sat., 8.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

\*\*3B. German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. *Tu., Th., 9.45.*

MR. COLWELL.

German 3B is offered to students who have satisfactorily completed German 2, or its equivalent.

4. Schiller and Goethe. *Maria Stuart*; *Wallenstein*; *Egmont*; Robertson's Correspondence between Goethe and Schiller; lyrics; collateral reading in historical prose. *Tu., Th., Sat., 11.45.* MR. COLWELL.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in

advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY.

## FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

### SUBJECTS

\*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.* PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

\*2. Intermediate French. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Mon., Wed., Fri., 8.45.*

PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language.

\*\*3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.* PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century.. Crane's Société Française au XVIIe Siècle; Molière, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné;

Madame de la Fayette; Rostand, Cyrano de Bergerac; collateral reading from modern critics. *Mon., Wed., Fri., 2.00.* PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri., 3.00.*

PROFESSOR LEWIS.

Either half-year may count as a half-subject.

6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Petit de Julleville and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Mon., Wed., Fri., 9.45.*

PROFESSOR FAY.

## ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature. This subject is presented in alternate years.

### SUBJECT

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, *Merope*; Dante, *Divina Commedia* (Scartazzini's edition). *Tu., Th., Sat., 10.45.*

PROFESSOR FAY.]

## LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the



faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and three composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, 7, and all designated by numbers above 7, as well as all subjects in Classical Archaeology, are suitable for graduate students.

#### SUBJECTS

\*1. Cicero, *De Senectute*, or *De Amicitia*; Vergil, *Eclogues*; selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.*

PROFESSOR DENISON.

Latin 1 is introductory to all later subjects. Latin 5 is designed primarily for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, *Cena Trimalchionis*; Horace, *Odes* and *Epodes*; Tacitus, *Germania* or *Agricola*; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.*

PROFESSOR DENISON.

Latin 2 is open to students who have completed Latin 1.

[3. Juvenal, principal *Satires*; Martial, selected *Epigrams*; Suetonius, selections; Tacitus, selections from the *Annals*; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.]

4. Horace, *Satires* and *Epistles*; Plautus, two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.



\*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Th., 2.00.* PROFESSOR DENISON.

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention will be paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th., 2.00.* PROFESSOR DENISON.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.* PROFESSOR DENISON.

8. Catullus and the Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours a week. (1)* PROFESSOR DENISON.

[9. Reading course, to be announced later. *Three hours a week. (2)* PROFESSOR DENISON.]

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours a week. (2)* PROFESSOR DENISON.]

Latin 8, 9, and 10 are half subjects, and are given, one each year, in regular rotation. They are open to students who have completed Latin 1, but are intended to be a supplement, not a substitute, for 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end. The authors selected will be studied mainly from a literary point of view.

NOTE:—The attention of Greek and Latin students is called to related subjects listed under Classical Archaeology, pages 70 and 71.

## GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without

translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

## SUBJECTS

\*1. Elementary. Goodwin's Grammar; Xenophon, *Anabasis*; Homer.  
*Double subject. Daily, 9.45.* PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

\*\*2. Xenophon, *Symposium*; Plato, *Euthyphron*, and *Apology*; Homer; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Book VIII; Plutarch, *Life of Themistocles*; Thucydides, portions of Book I; Aeschylus, the *Persians*; Sophocles, *Antigone*; Euripides, *Alcestis*. *Tu., Th., Sat., 11.45.* PROFESSOR WADE.

4. Theocritus, *Idylls* and *Epigrams*; Pindar, *Olympian* and *Pythian Odes*; Tyler's *Selections from Greek Lyrics*; reading at sight in the *Odyssey*. *Tu., Th., Sat., 8.45.* PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, *Symposium*; Aristotle, *Ethics*, Books I-IV, or *Politics*; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

\*\*6. Greek Composition; practice in sight reading. *One hour a week.*

PROFESSOR WADE.

Greek 6 may be taken by anyone who has had the equivalent of Greek

1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition; reading at sight. *One hour a week.*

PROFESSOR WADE.

Greek 7 is open only to students who have completed Greek 6.

8. Elegiac and Lyric Poets. Lectures and reading. *Three hours a week.* (2)

PROFESSOR WADE.

Greek 8 is open to students who have completed Greek 2.

[9. Orators: Jebb, Selections from the Attic Orators; Lysias; Demosthenes. Reading and lectures. *Three hours a week.* (2)

PROFESSOR WADE.]

Greek 9 is open to students who have completed Greek 2.

[10. Advanced subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student.

PROFESSOR WADE.]

### CLASSICAL ARCHAEOLOGY

Under this title are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. Completion of Greek 1, or Latin 1, or both, as the instructors may require, is, except for subjects 1 and 2, a pre-requisite for admission. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archaeology. It is intended to give two subjects each year, as follows:—

#### SUBJECTS

[1. Greek, Roman, and Etruscan Architecture. *Three hours a week.* (1)

PROFESSOR DENISON.]

[2. Greek and Roman Sculpture. *Three hours a week.* (2)

PROFESSOR WADE.]

Classical Archaeology 1 and 2 will be given in 1904-1905.

[3. Roman Private Life. *Three hours a week.* (1)

PROFESSOR DENISON.]

Classical Archaeology 3 will be given in 1905-1906.

4. Greek Private Life. *Mon., Wed., Fri., 4.00.* (1) PROFESSOR WADE.

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

5. Roman Public Life. *Three hours a week.* (2) PROFESSOR DENISON.

[6. Greek Public Life. *Three hours a week.* (2) PROFESSOR WADE.]

Classical Archaeology 6 will be given in 1905-1906.

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

## HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

### SUBJECTS

1. The Elements of Grammar; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Tu., Th., Sat., 11.45.*

PROFESSOR WOODBRIDGE.

2. Syntax; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE.

## PHILOSOPHY\*

PROFESSOR CUSHMAN, PROFESSOR SHIPMAN, PROFESSOR TOUSEY, AND PROFESSOR KNIGHT

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of

\* The departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in which twelve term hours of work are required for A.B. See page 57.

two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic is open to him. In all cases where there is opportunity it is advised that the student begin with the history of philosophy, which is its primer. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first-year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

#### INTRODUCTORY SUBJECTS

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (1)

PROFESSOR CUSHMAN.

[2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.* (1)

PROFESSOR CUSHMAN.]

Philosophy 1 and Philosophy 2 are given at the same hour on alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45.* (1)

PROFESSOR SHIPMAN.

#### ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45.* (2)

PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.



**\*\*5. Psychology.** Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45. (2)*

PROFESSOR CUSHMAN.

Philosophy 5 must be preceded by Philosophy 1, 2, or 3.

**6. Ethics, Theory of.** The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of determinism; the moral ideal. Text-books, lectures, assigned reading, themes. *Mon., Wed., Fri., 10.45. (1)*

PROFESSOR TOUSEY.

Philosophy 6 must be preceded by Philosophy 1, 2, or 3.

**7. Ethics, Historical and Critical.** History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Mon., Wed., Fri., 10.45. (2)*

PROFESSOR TOUSEY.

Philosophy 7 must be preceded by Philosophy 6.

**8. Ethics, Applied.** Bearing of moral theory on the problems of (a) the individual life, (b) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology. Text-books, lectures, prescribed reading, and theses. *Tu., Th., Sat., 10.45. (2)*

PROFESSOR TOUSEY.

Philosophy 8 must be preceded by Philosophy 6.

**9. Metaphysics: the Theory of Reality,** including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.*

PROFESSOR CUSHMAN.

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

**10. Aesthetics: the theory of beauty, and the philosophy of art;** historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45. (1)*

PROFESSOR CUSHMAN.

[**11. English Philosophy from Hobbes to Hume.** The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45. (2)*

PROFESSOR CUSHMAN.]

Philosophy 11 will be given in 1904-1905.



[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45. (2)*

PROFESSOR CUSHMAN.]

13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45 (2)*

PROFESSOR CUSHMAN.

14. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.*

PROFESSOR TOUSEY.

15. The Philosophy of Religion, historical, critical, and constructive. topical reports by the class, and lectures. *Tu., Th., Sat., 11. 45.*

PROFESSOR KNIGHT.

## PEDAGOGICS

### SUBJECT

1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45. (2)*

PROFESSOR CUSHMAN, ASSISTED BY TEACHERS  
FROM LEADING SECONDARY SCHOOLS.

## HISTORY AND PUBLIC LAW\*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 9 offer to properly qualified students opportunity to make a more detailed study of limited periods in

\* See note, page 57.

the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 11 to 14 relate to church history and the comparative history of religions. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

### History

#### SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes.  
*Mon., Wed., Fri., 10.45.* PROFESSOR EVANS AND MR. WOOD.

History 1 must precede all other subjects in History, excepting History 11, which may precede it, History 12, which may accompany it, and History 2, which it may either precede or accompany. History 1 and 2 are not open to Freshmen, and will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES.

3. American History from 1750 to the Civil War. Text-book, lectures, and themes. *Mon., Wed., Fri., 10.45.* PROFESSOR BOLLES.

4. Constitutional History of England. A study of the growth of the Constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.

5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the rise of Russia, the creation of Prussia, the rule of Richelieu and Mazarin, the age of Louis XIV, and the Ancient Régime. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.

History 4 and 5 will not be given in 1904-1905, but may be expected in 1905-1906.

[6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.]

[7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.]

History 6 and 7 will not be given in 1903-1904, but may be expected in 1904-1905.

[8. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tu., Th., 3.00. (1)*

History 8 will be given in 1904-1905.

PROFESSOR BOLLES.]

[9. English Social Life. Lectures and illustrations. *Tu., Th., 3.00. (2)* PROFESSOR BOLLES.]

History 9 will be given in 1904-1905.

11. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

12. History of the Beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR HARMON.

13. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45. (1)* PROFESSOR KNIGHT.

14. History of the Church, including the Sects, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45.*

PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1903-1904 the subject of study will be the constitutional history of the Civil War. History 15 is open only to such students, making History their major subject, as receive the special permission of the instructor. Full subject, counting as six term hours; weekly meetings of two hours each. PROFESSOR EVANS.

### Public Law and Administration

#### SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, *The American Commonwealth*, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45. (1)* PROFESSOR EVANS.

Public Law 1 must be preceded by History 1, and must precede all other courses in this group, except Public Law 3. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1, 2 or its alternate, and 3 in their third year.

[2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45. (2)* PROFESSOR EVANS.]

Public Law 2 will not be given in 1903-1904, but may be expected in 1904-1905.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tu., Th., Sat., 9.45. (1)* PRESIDENT CAPEN.

Public Law 3 must be preceded by History 1.

[4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri., 8.45. (1)* PROFESSOR EVANS.]

[5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon. Wed., Fri., 8.45. (2)* PROFESSOR EVANS.]

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.]

7. Elements of Jurisprudence. A study of the leading juristic principles, based on the Institutes of Justinian and Blackstone's Commentaries, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR EVANS.

Public Law 7 will not be given in 1904-1905.

### POLITICAL SCIENCE\*

PRESIDENT CAPEN, PROFESSOR METCALF, AND MR. PRICE

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with social problems.

To these ends instruction is offered at present in eight different subjects. Economics 1 is designed to lay the foundation for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics, if qualified to do so, may enter upon the work in the first year of their college course. For the advanced subjects a knowledge of general, constitutional, and political history is useful. The character of the work in the advanced classes is briefly outlined in connection with the following statement of subjects.

#### SUBJECTS

1. Elements of Economics. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on

\* See note, page 57.



trade unions, co-operation, socialism, banking, and finance. Bullock's Introduction to the Study of Economics is used as a guide. *Tu., Th., Sat., 10.45.* PROFESSOR METCALF.

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the transition from regulated to competitive system of industry; the industrial revolution; the financial, commercial, and industrial history of the British-American colonies and the Confederation. In the study of the United States during the nineteenth century the problems of free and slave labor, transportation, industrial organization, tariff, and finance will receive special attention. *Mon., Wed., Fri., 9.45.* MR. PRICE.

3. Practical Sociology. The nature and methods of social science. This subject is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Three hours, to be arranged. (2)* PROFESSOR METCALF.

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. Adams's Public Finance is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45. (1)* PROFESSOR METCALF.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. Dewey's Financial History of the United States is used as a guide. *Tu., Th., Sat., 8.45. (2)* PROFESSOR METCALF.

6. Selected topics in Economics. Topics for 1903-1904 are: *First half-year: (a)* Modern Industrial Combinations, being a study of the causes producing trusts, the function of the industrial promoter, capitalization of trusts, influence of industrial monopoly upon prices, profits and wages, the practical results of regulation through publicity, taxation, and state ownership. *Second half-year: (b)* The Modern Organization of Labor,—an account of the growth, methods, and aims of modern associations of wage earners, a study of their relations to the factory system, labor disputes, labor legislation, workingmen's insurance, and state socialism.



(c) The Theory and History of Commercial Crises in England, France, Germany, and the United States during the nineteenth century.

The Report of the United States Industrial Commission will form the basis for topics (a) and (b). Each member of the class will be required to trace the history and workings of some prominent combination of capital or labor. Either half-year may count as a half-subject. *Tu., Th., Sat., 9.45.*

PROFESSOR METCALF.

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 6 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR METCALF.

8. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructors.*

PRESIDENT CAPEN AND PROFESSOR METCALF.

## MATHEMATICS

PROFESSOR BROWN, PROFESSOR WREN, AND MR. RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 1, with 2 or 3, constitutes the required work in Mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue further work in the department should take 3 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. Other subjects may be taken when the student is prepared for each. Subjects 9, 10, 11, 13, and 14 require a knowledge of the Calculus. Juniors and Seniors who have mastered the Calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

### SUBJECTS

1. College Algebra. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45. (1)*

MR. RANSOM.

2. Solid Geometry. *Tu., Th., Sat., 9.45. (2)* MR. RANSOM.
3. Trigonometry. *Tu., Th., Sat., 8.45. (2)* MR. RANSOM.
4. Analytical Geometry. *Mon., Wed., Fri., 11.45. (1)*  
PROFESSOR WREN.
5. Elements of the Calculus. *Mon., Wed., Fri., 11.45. (2)*  
MR. RANSOM.
6. Differential and Integral Calculus. *Mon., Wed., Fri., 9.45. (1)*  
MR. RANSOM.
7. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45. (2)*  
PROFESSOR WREN.
9. Theory of Equations and Determinants. *Three hours for the first half year.*  
MR. RANSOM.
10. Differential Equations. *Three hours for the second half-year.*  
MR. RANSOM.
11. Method of Least Squares. *Two hours for the second half-year.*  
PROFESSOR WREN.
12. Quaternions. *Three hours for the first half-year.*  
PROFESSOR WREN.

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, and 4.

[13. The Theory of the Potential Function. *Three hours for the second half-year.*  
PROFESSOR WREN.]

14. Theoretical Mechanics. *Mon., Wed., Fri., 10.45.* MR. RANSOM.

## PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book is used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

An elective course is offered of about twenty-five lectures upon the relations of physics to other branches of natural science,

introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in physics. Spencer's First Principles is read, and its subject-matter thoroughly discussed.

In the Physical Laboratory students are given Ames and Bliss's Laboratory Manual, and a syllabus of the course, for guides. These are supplemented by Glazebrook's Physical Optics, Pickering's Manipulations, Kaulrausch's Measurements, Stewart and Gee's Practical Physics, vol. 1, Glazebrook and Shaw's Practical Physics, Nichols's Laboratory Manual, vols. 1 and 2. In addition to the experimental and note-book work, many problems are solved. For the recitation and lecture work Ames's Theory of Physics is used.

Physics 2 and Physics 4 comprise elementary work in Electricity and Magnetism, Physics 4 being a mathematical treatment based upon Nichols and Franklin's Theory of Physics, vol. 2.

In the laboratory subject in Electricity much attention is given to Wheatstone's bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive due attention. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

#### SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing Physics for their prescribed science subject, and is introductory to other subjects in Physics. *Mon., Wed., Fri., 10.45.*

PROFESSOR DOLBEAR.

[2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Mon., Wed., Fri., 11.45.* (2)]

ASSISTANT PROFESSOR H. G. CHASE.]

3. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Lecture, Wed., 8.45. Laboratory, Tu., Th., 2.00 to 5.00.* (2) *Counting as three term hours.*

ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

4. Electricity: Elementary Mathematical Treatment. *Mon., Wed., Fri., 11.45.* (1)  
ASSISTANT PROFESSOR H. G. CHASE.

5. Electrical Laboratory: Measurements and Tests. *Counting as four term hours. Mon., or Fri., 2.00 to 6.00.*

ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

Physics 5 must be preceded by Physics 4.

6. Relation of Physics to Sociology. Lectures. *Tu., Th., 4.00.* (1)  
PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tu., Th., 4.00.* (2)  
PROFESSOR DOLBEAR.

- [8. Telephone and Telegraph. *Tu., Th., 9.45.* (2)  
PROFESSOR DOLBEAR.]

## ASTRONOMY

### SUBJECT

1. Recitations and lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tu., Th., 3.00.* (1)  
PROFESSOR DOLBEAR.

## CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking sub-

ject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, and commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The course of lectures on metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of organic chemistry begins with a course of experimental lectures, together with recitations, which are designed to cover the general principles and methods, and include description of the most important organic compounds. For those who wish to continue the study of this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are more fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining



the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special Course in Chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Course in Chemistry.

#### SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work, as assigned by the instructor. Counting as six term hours.*

PROFESSOR DURKEE AND DR. TURNER.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45. (1) Counting as three term hours.*

PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45. (2) Counting as three term hours.*

PROFESSOR DURKEE.

4. Qualitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

5. Qualitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

[6. Mineralogy 1 is equivalent to Chemistry 6.]



7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00. (2) Counting as two term hours.*

PROFESSOR DURKEE.

8. Metallurgy. Lectures and recitations. Chemistry 8 is open to students who have taken Chemistry 1. *Wed., Fri., 10.45. (2)*

PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour. (1)*

PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45. (1) Counting as three term hours.*

DR. ECKSTEIN.

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45. (2) Counting as two term hours.*

DR. ECKSTEIN.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Hours to be arranged. (1) Counting as three term hours.*

PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. *(2) and (1) Counting as six term hours.*

PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors. Counting as two term hours.*

PROFESSOR MICHAEL AND DR. ECKSTEIN.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.*

PROFESSOR MICHAEL AND DR. ECKSTEIN.

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.*

PROFESSOR MICHAEL.

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.*

PROFESSOR MICHAEL.

## BIOLOGY

PROFESSOR KINGSLEY AND DR. LAMBERT

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four

hours a week is the minimum, but mere time service is not sufficient.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, as well as abundant material for illustration and dissection. There is also a department library containing about 1,700 volumes and over 4,800 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

#### SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th.: lecture, 11.45; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 1 is required of all who elect work in this department, and is a pre-requisite for the other biological subjects.

2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.

[3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.]

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45; laboratory, Tu., Th., 2.00 to 4.00. (2) Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45; laboratory, Mon., Fri., 2.00 to 4.00. (1) Counting as three term hours.*

PROFESSOR KINGSLEY.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri.: lecture, 11.45; laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*

DR. LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem.

PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

## GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. A laboratory fee of two dollars is required of all students taking laboratory courses.

### SUBJECTS

1. Physiography. Lectures and recitations, laboratory and field work. *Hours to be arranged. (2) Counting as three term hours.*

MR. RICHARDS AND MR. THYNG.

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45. Counting as six term hours.*

MR. RICHARDS.

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours. (1) or (2)* PROFESSOR KINGSLEY AND MR. RICHARDS.

4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* MR. RICHARDS.

### MINERALOGY

1. Determinative Mineralogy. Laboratory work, six hours a week; open to students who have taken Chemistry 1, 2, and 3. *Tu., Th., Sat., 10.45—12.45. (1)* MR. RICHARDS.

[2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45—12.45. (2) Counting as three term hours.* MR. RICHARDS.]

### DRAWING AND SHOPWORK

PROFESSOR ANTHONY

#### Drawing

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any

well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

#### SUBJECTS

[For hours, see the Engineering program.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week (second half-year).*

PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour† a week (second half-year).*

PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours\* a week for the year.*

PROFESSOR ANTHONY AND MR. ASHLEY.

4. Kinematics. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

5. Machine Drawing (elementary). *Two hours† a week (second half-year).*

ASSISTANT PROFESSOR C. H. CHASE.

6. Machine Drawing (advanced). *Two hours\* a week (first half-year).*

ASSISTANT PROFESSOR C. H. CHASE.

7. Elements of Design. *One hour\* a week (second half-year).*

PROFESSOR ANTHONY.

8. Machine Design (advanced). *Two hours\* a week (first half-year).*

PROFESSOR ANTHONY.

#### SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the

\* Each hour represents a three-hour period.

† Each hour represents a two-hour period.



work in design being carried to completion in the shops from drawings prepared in the drafting-room.

#### SUBJECTS

[For hours, see the Engineering program.]

1. Carpentry, Turning, and Moulding. *Two hours\* a week (first half-year).* MR. STEWART.
2. Pattern-making. *One hour\* a week (second half-year).* MR. STEWART.
3. Forging. *One hour\* a week (second half-year).* MR. STEWART.
4. Vise and Machine Tools. *Two hours\* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.
5. Project Work. *Three hours\* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

### CIVIL AND MECHANICAL ENGINEERING

PROFESSOR BRAY AND PROFESSOR SANBORN

Students who desire to elect engineering courses as collateral to their studies in Liberal Arts, or with a view of pursuing study in engineering after graduation, will find open to them the subjects outlined below. For all the subjects algebra, geometry, and trigonometry are an indispensable preparation. Fuller details, including the program hours, are given in this catalogue under the Department of Engineering.

#### SUBJECTS

1. Surveying. General field practice, computations, and plotting. *Two hours\* a week (first half-year); two hours\* a week (second half-year).* PROFESSOR SANBORN AND ASSISTANT PROFESSOR ROCKWELL.
2. Precise Surveying, Engineering Jurisprudence, Fire Protective Engineering, Hydrographic Surveying. *Two hours\* a week.* PROFESSOR SANBORN.
3. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours\* a week (first half-year).* PROFESSOR BRAY.
4. Railroad Engineering (to be taken with Engineering 3). *Three hours a week.* PROFESSOR BRAY.
5. Hydraulics. *Three hours a week (second half-year).* PROFESSOR SANBORN.

\* See foot-note, page 90.



6. Pure Mechanics. *Three hours a week (first half-year).*

PROFESSOR SANBORN.

7. Applied Mechanics. *Three hours a week (second half-year).*

PROFESSOR BRAY.

8. Experimental Mechanics (laboratory). *One hour\* a week (first half-year).* PROFESSOR SANBORN AND ASSISTANT PROFESSOR ROCKWELL.  
*One hour\* a week (second half-year).*

PROFESSOR BRAY AND ASSISTANT PROFESSOR ROCKWELL.

9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR C. H. CHASE.

10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).*

PROFESSOR BRAY.

11. Highways. *One hour a week (second half-year).*

PROFESSOR BRAY

12. Masonry Construction. *Three hours a week (second half-year).*

PROFESSOR BRAY.

- [13. Sanitary Engineering. *Three hours a week (second half-year).*

PROFESSOR SANBORN.]

14. Roofs and Bridges. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR ROCKWELL.

15. Structural Design. *Two hours a week.*

ASSISTANT PROFESSOR ROCKWELL.

## ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Letters who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 4 and 5 require a like acquaintance with calculus and differential equations.

All subjects in this department must also be preceded by Physics 4, or its equivalent.

### SUBJECTS

[For hours, see the Engineering program.]

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).*

PROFESSOR HOOPER.

2. Electrical Problems. *Two hours a week (second half-year).*

MR. ROLLINS.

---

\* Each hour represents a three-hour period.

3. Electrical Laboratory (advanced course). *Three hours a week for the year.* PROFESSOR HOOPER.
4. Electricity: Alternating Currents. *Three hours a week for the year.* PROFESSOR HOOPER.
5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).* PROFESSOR HOOPER.
6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).* PROFESSOR HOOPER.
7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).* PROFESSOR HOOPER.
8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).* PROFESSOR HOOPER.

## MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

### SUBJECTS

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., 4.00.* PROFESSOR LEWIS.

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2.

- [2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading concerning the lives of Bach, Mozart, and Beethoven. *Tu., 3.00-4.00; Th., 3.00-5.00.* PROFESSOR LEWIS.]

An elementary knowledge of piano playing is required. Music 2 will be given in 1904-1905.

3. Sight-reading in Song, and Harmonic Analysis. *Th., 4.00.* PROFESSOR LEWIS.

Only those who have finished Music 2 may take Music 3. Work of the prominent composers of choral works in the eighteenth and nineteenth centuries will furnish the material for study in sight-reading. The harmonic analysis begun in Music 2 will be continued, with special attention

to the more difficult problems of modern music. B. Cutter's "Harmonic Analysis" will be used as a text-book.

4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Jadassohn, Bridge, and others; collateral reading concerning the lives of Schubert, Schumann, Mendelssohn, and Wagner. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.]

Students who elect Music 5 must have attained Grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45. (2)* PROFESSOR LEWIS.

Music 6 will be a two-hour subject during 1903-1904, but the class occasionally will meet at the third of the assigned program hours.

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read with facility German and French, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00. (2)* PROFESSOR DOLBEAR.]

The first half-year's work in Physics 1 must have been done by those who elect Music 8. Music 8 will not be given until 1904-1905.

**THE FINE ARTS**

ASSISTANT PROFESSOR WHITEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9.45.*

ASSISTANT PROFESSOR WHITEMORE.]

2. The Fine Arts of the Middle Ages and the Renaissance. *Mon., Wed., Fri., 9.45.*

ASSISTANT PROFESSOR WHITEMORE.

Fine Arts 2 may precede Fine Arts 1.

**PHYSICAL TRAINING**

DR. STROUD AND MISS CARVILL

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumbbells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.



TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements.

Subjects in Roman type occupy three periods

Subjects in *Italic* type occupy two periods ; in **Boldface** type, one period

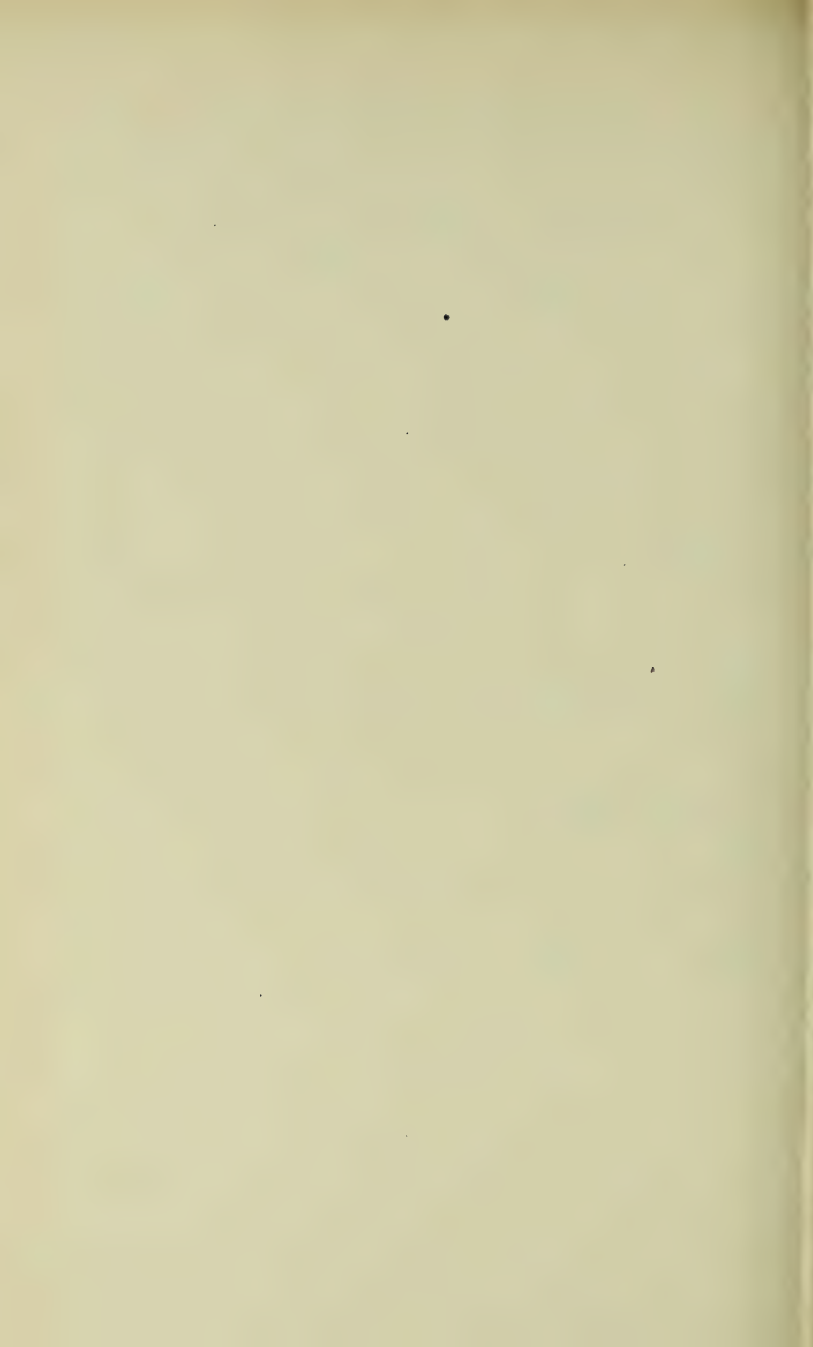
MONDAY, WEDNESDAY, FRIDAY

[illegible]









## Courses in Science

---

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

### COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

#### Freshman Year

**English 1.** The Theory and Practice of Composition. (*First half-year.*) See page 60.

**English 2.** A Study of Expression. (*Second half-year.*) See page 60.

**German 1.** Elementary German. See page 64.

*Or* **German 2.** Intermediate German. See page 64.

**French 1.** Elementary French. See page 65.

*Or* **French 2.** Intermediate French. See page 65.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

**Physics 1.** General Physics. See page 82.

**Chemistry 1.** General Chemistry. See page 85.

**Biology 1.** General Biology. See page 87.

**Physical Training.**

**Sophomore Year**

**German 2.** As above.

*Or German 3.* For the rapid reading of modern prose. (*First half-year.*) See page 64.

*And Biological German.* Reading of some important biological work. *Two hours a week.* (*Second half-year.*)

**French 2.** (For those entering with German.)

**Biology 2 or 3.** General Biology. See page 87.

**Mathematics 1, with 2 or 3.** Algebra, Geometry, Trigonometry. See page 80.

**Chemistry 2.** Qualitative Analysis. See page 85.

**Chemistry 3.** Qualitative Analysis. See page 85.

**Physical Training.**

**Junior Year**

**German 3 and Biological German** (for those entering with French), as above.

**Physics 3.** Physical Laboratory. See page 82.

**Chemistry 10.** Organic Chemistry. See page 86.

**Biology 2 or 3.** See page 87.

**Biology 4.** Elementary Physiology. See page 87.

**Biology 5.** Histology. See page 87.

**Senior Year**

**Geology 1.** Physiography. See page 88.

**Philosophy 1 or 2.** Introductory subject. (*First half-year.*) See Page 72.

**Philosophy 5.** Psychology. (*Second half-year.*) See page 73.

**Biology 7.** Botany. See page 88.

**Mineralogy 1.** Determinative Mineralogy. See page 89.

**Geology 2.** Geology. See page 88.

**Special work** (six term hours) in Biology, Geology, Chemistry, or Electricity.

**COURSE IN BIOLOGY**

PROFESSOR KINGSLEY

**Freshman Year**

As in the Freshman year of the course in General Science.

**Sophomore Year**

As in the Sophomore year of the course in General Science, except Mathematics.

**Junior Year**

**German 3B.** (*First half-year.*) **Biological German.** (*Second half-year,* for those entering with French.) **Biology 2** or 3, and 4, and 5, and **Geology**, as in the Senior year of the course in General Science.

**Philosophy 1** (or 2) and 5, as in the Senior year of the course in General Science.

**Chemistry 10.** Organic Chemistry. See page 86.

**Senior Year**

**Mineralogy 1** and **Geology 2**, as in the Senior year of the course in General Science.

**Biology 7.** Botany. See page 88.

**Biology 8.** **Special Research in Biology**, including dissertation. *Twelve hours.*

**MEDICAL PREPARATORY COURSE**

PROFESSOR KINGSLEY

**Freshman Year**

As in the Freshman year of the course in General Science.

**Sophomore Year**

As in the Sophomore year of the course in Biology.

**Junior Year**

As in the Junior year of the course in Biology.

**Senior Year**

**Philosophy 3.** Logic, especially Deductive. See page 73.

**Philosophy 6.** Ethics, the Theory of Morals. See page 73.

**Human Anatomy and Physiology.** (At Tufts Medical School.)

**Medical Chemistry.** (At Tufts Medical School.)



## COURSE IN CHEMISTRY

PROFESSOR DURKEE

## Freshman Year

**English 1.** The Theory and Practice of Composition. (*First half-year.*) See page 60.

**English 2.** A Study of Expression. (*Second half-year.*) See page 60.

**German 1.** Elementary German. See page 64.

*Or* **German 2.** Intermediate German. See page 64.

Those entering with German will take German 2. Others will take German 1.

**Mathematics 1, with 2 or 3.** Algebra, Solid Geometry, and Trigonometry. See page 80.

**Physics 1.** General Physics. See page 82.

**Chemistry 1.** General Chemistry. See page 85.

**Mechanical Drawing.** *Two hours a week (first half-year).* See page 88.

**Elective.** *Three hours a week (second half-year).*

**Physical Training.**

## Sophomore Year

**German 2.** As above.

*Or* **French 1.** Elementary French. See page 65.

French 1 will be taken by those who entered without French. Others will take German 2.

**Physics 3.** Physical Laboratory. See page 82.

**Chemistry 2.** Basic Qualitative Analysis. See page 85.

**Chemistry 3.** Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 85.

**Chemistry 4.** Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 85.

**Chemistry 10.** Organic Chemistry. See page 86.

**Chemistry 11.** Theoretical Chemistry. See page 86.

**Physical Training.**

**Junior Year**

**Chemistry 5.** Quantitative Analysis (advanced). See page 85.

**Mineralogy 1.** See page 89.

**Chemistry 8.** Metallurgy. See page 86.

**Chemistry 12.** Theoretical and Inorganic Chemistry (advanced). See page 86.

**Chemistry 13.** Organic Chemistry (advanced). See page 86.

**Chemistry 14.** Laboratory work in Inorganic Preparations. See page 86.

**Chemistry 15.** Laboratory work in Organic Analysis. See page 86.

**Biology 1.** General Biology. See page 87.

**Political Science 1.** Elements of Political Economy, and Practical Problems. See page 79.

**Senior Year**

**Biology 4.** Elementary Physiology. See page 87.

**Chemistry 7.** Fire Assay. See page 86.

**Chemistry 9.** Gas Analysis. See page 86.

**Chemistry 13.** Organic Chemistry (advanced). See page 86.

**Elective.** *Six hours a week.*

**Research and Thesis.** *Four hour a week (first half-year) ; ten hours a week (second half-year).*



DEPARTMENT OF  
ENGINEERING



## Faculty of the Department of Engineering

---

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT . . . . .	8	Professors Row
GARDNER C. ANTHONY, A.M., DEAN . . . . .	14	Professors Row
<i>Professor of Technical Drawing</i>		
HARRY GRAY CHASE, B.S., SECRETARY . . . . .	2	Curtis Avenue
<i>Assistant Professor of Physics</i>		
CHARLES D. BRAY, C.E., A.M. . . . .	98	Professors Row
<i>Professor of Mechanical Engineering</i>		
AMOS E. DOLBEAR, M.E., PH.D., LL.D. . . . .	134	Professors Row
<i>Professor of Physics and Astronomy</i>		
CHARLES E. FAY, A.M., LITT.D. . . . .	92	Professors Row
<i>Wade Professor of Modern Languages</i>		
WILLIAM L. HOOPER, A.M., PH.D. . . . .	124	Professors Row
<i>Professor of Electrical Engineering</i>		
FRANK W. DURKEE, A.M. . . . .	38	Professors Row
<i>Professor of Inorganic Chemistry</i>		
FRANK B. SANBORN, C.E., M.S. . . . .	10	Buena Vista Park, Cambridge
<i>Professor of Civil Engineering</i>		
HENRY C. METCALF, A.B., PH.D. . . . .	92	Professors Row
<i>Professor of Political Science</i>		
FRANK G. WREN, A.M. . . . .	16	Professors Row
<i>Professor of Mathematics</i>		
CHARLES H. CHASE, S.B. . . . .		Stoneham
<i>Assistant Professor of Steam Engineering</i>		
EDWARD H. ROCKWELL, S.B. . . . .	133	Powder House Boulevard
<i>Assistant Professor of Civil Engineering</i>		
SAMUEL C. EARLE, A.M. . . . .	9	Electric Avenue
<i>Assistant Professor of English</i>		
THOMAS WHITTEMORE, A.B. . . . .		Θ Δ X House
<i>Assistant Professor of English</i>		
CHARLES C. STROUD, A.B., M.D. . . . .		Allen House, Sawyer Ave.
<i>Instructor in Physical Training</i>		



HAROLD J. TURNER, PH.D. . . . .	33	Emery Street
<i>Instructor in Chemistry</i>		
OSKAR ECKSTEIN, PH.D., P.D. . . . .	28	Professors Row
<i>Instructor in Chemistry</i>		
EDWIN B. ROLLINS, B.S. . . . .	1	West Hall
<i>Instructor in Electrical Engineering</i>		
GEORGE F. ASHLEY . . . . .	11	Laurel St., Somerville
<i>Instructor in Drawing</i>		
CHARLES E. STEWART, S.B. . . . .	34	Emery St., Medford Hillside
<i>Instructor in Shopwork</i>		
PHILIP M. HAYDEN, A.B. . . . .		Dean Hall, 6
<i>Instructor in French</i>		

---

#### COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman*; Professors Hooper and Wren.

## Department of Engineering

---

The department offers courses of four years in CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, AND CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science. Each course is arranged to permit of considerable freedom of election in each of the other courses. Election may also be made in the College of Letters.

While most of the instruction is given in engineering subjects, leading to a professional degree, the primary object of the department is to give a broad education which shall tend toward the highest development of every student who may seek instruction through any of its courses.

The Department of Engineering is open to all earnest students, whether they are candidates for a degree, or desire special courses. Through its scientific fitting school it offers unusual advantages to those whose previous preparation has been in the field of practice rather than theory, and whose training in the rudimentary branches may be deficient.

### REQUIREMENTS FOR ADMISSION

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

**Elementary English ;**  
**Algebra ;**

**\*One Elementary Foreign Language ;**  
**Plane and Solid Geometry.**

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units :

**Elementary History, 2**  
**Physics, 1 or 2**  
**Chemistry, 1 or 2**

**Mechanical Drawing, 1**  
**Freehand Drawing, 1**  
**Shop Work, 1**

Detailed statements concerning these admission requirements will be found in pages 41 to 53.

---

\* Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in engineering on the conditions stated on page 142.

**EXPENSES**

The following estimates represent the fixed annual expenses :

Tuition . . . . .	\$120.00	\$120.00
Physical culture, including gymnasium and grounds . . . . .	10.00	10.00
Reading-room . . . . .	1.00	1.00
Half room-rent . . . . .	20.00	91.00
Hospital . . . . .	2.00	2.00
Board, \$3.50 to \$5.00 a week (36 weeks) . . . . .	126.00	180.00
<hr/>		
Total . . . . .	279.00	\$404.00
<b>SPECIAL CHARGES.</b>		
Chemical Laboratory charges for breakage (average) . . . . .		\$4.00
Chemical Laboratory charges for chemicals . . . . .		8.00
Instruments, books, and general supplies (if new) . . . . .	15.00 to 25.00	
Non-resident students not hiring rooms at the college are subject to a fixed charge of . . . . .		10.00

As an aid toward meeting expenses, there are many opportunities for work in the shops, laboratories, and drafting rooms, for which a fixed rate of compensation is established. Applications for these positions should be made to the Dean, and the appointments must be confirmed by the Engineering Faculty.

For a list of available scholarships, and for further regulations concerning expenses, consult the table of contents under "General Information."

**The Degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Master of Science** will be conferred upon Bachelors of Science in Civil, Electrical, or Mechanical Engineering, who shall satisfactorily pursue advanced professional study at the College for one year, under the conditions required of candidates for the Degree of Master of Arts ; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required. For the detailed conditions under which these degrees are granted, consult the table of contents under the "Graduate Department."

Further information concerning the Department of Engineering will be found in a special pamphlet, to be obtained by addressing Dean Anthony, Tufts College, Mass.

## Courses of Instruction

---

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects for instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 115, Mechanical Engineering, page 117, Electrical Engineering, page 119, Chemical Engineering, page 121.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 122 to 143.

### FRESHMAN YEAR

[Alike for all courses.]

FIRST TERM	No.	SECOND TERM	No.
Algebra . . . . .	1	Analytical Geometry . . . . .	5
Trigonometry . . . . .	3	Descriptive Geometry . . . . .	21
Mechanical Drawing . . . . .	20	Mechanical Drawing . . . . .	20
Freehand Drawing . . . . .	22	Technical Sketching . . . . .	23
Carpentry, Turning, and Foundry . . . . .	40	Pattern Making . . . . .	42
Physics . . . . .	70	Physics . . . . .	70
English . . . . .	140	English . . . . .	141
French or . . . . .	161	French or . . . . .	161
German . . . . .	166	German . . . . .	166
Physical Training . . . . .	185	Physical Training . . . . .	185

**CIVIL ENGINEERING**

The studies which underlie general engineering and science—mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in precise surveying, hydrography, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

## CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

## SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Forging . . . . .	44
General Chemistry . . . . .	50	General Chemistry . . . . .	50
Surveying . . . . .	90	Physical Laboratory . . . . .	72
English . . . . .	142	Surveying . . . . .	91
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Machine Drawing ( <i>elective</i> ) . . . . .	26

## JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Applied Calculus . . . . .	8	Fire Protection—Hydrography . . . . .	93
Qualitative Analysis . . . . .	52	Masonry or Sanitary Engineering . . . . .	111
Precise Surveying—Jurisprudence . . . . .	92		109
Pure Mechanics . . . . .	112	Applied Mechanics . . . . .	113
Experimental Mechanics . . . . .	115	Experimental Mechanics . . . . .	116
Steam Engine . . . . .	120	Structural Design . . . . .	117
<i>* Two of the following electives :</i>		<i>* Three of the following electives :</i>	
Machine Drawing (advanced) . . . . .	27	Differential Equations . . . . .	9
Machine Shop . . . . .	45	Least Squares . . . . .	11
Mineralogy . . . . .	59	Machine Design . . . . .	28
† Electrical Laboratory . . . . .	73	Qualitative Analysis . . . . .	53
Electricity and Magnetism . . . . .	74	† Electrical Laboratory . . . . .	73
English . . . . .		Dynamo-Electric Machinery . . . . .	77
Modern Languages . . . . .		Steam Engineering . . . . .	121
		Geology . . . . .	130
		English . . . . .	
		Modern Languages . . . . .	

## SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Railroad Surveying . . . . .	94	Highways . . . . .	99
Railroad Engineering . . . . .	95	Hydraulics . . . . .	110
Roofs and Bridges . . . . .	97	Sanitary Engineering or Masonry . . . . .	109
Political Economy . . . . .	180		111
<i>* Two of the following electives :</i>		Thesis . . . . .	135
Mathematics . . . . .		<i>* Three of the following electives :</i>	
Mineralogy . . . . .	59	Mathematics . . . . .	
Quantitative Analysis . . . . .	61	Quantitative Analysis . . . . .	61
Gas Analysis . . . . .	63	Applied Chemistry . . . . .	65
Applied Mechanics . . . . .	114	Assaying . . . . .	67
Structural Design . . . . .	118	Telegraph and Telephone . . . . .	87
Engineering Laboratory . . . . .	123	Railroads—Economic Locations . . . . .	96
English . . . . .		Bridge Design . . . . .	98
Modern Languages . . . . .		Steam Engineering . . . . .	121
		Geology . . . . .	130
		English . . . . .	
		Modern Languages . . . . .	

\* Electives must be approved by the Department.

† No. 73 must be taken for entire year, and preceded by, or taken with, 74.



**MECHANICAL ENGINEERING**

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through four terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and of boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

## MECHANICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

## SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Surveying ( <i>elective</i> ) . . . . .	91

## JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Applied Calculus . . . . .	8	Differential Equations . . . . .	9
Machine Drawing . . . . .	27	Machine Design . . . . .	28
Qualitative Analysis . . . . .	52	Machine Shop . . . . .	45
Electricity and Magnetism . . . . .	74	Applied Mechanics . . . . .	113
Pure Mechanics . . . . .	112	Experimental Mechanics . . . . .	116
Experimental Mechanics . . . . .	115	Steam Engineering . . . . .	121
Steam Engine . . . . .	120	<i>* Two of the following electives:</i>	
<i>* One of the following electives:</i>		Qualitative Analysis . . . . .	53
Electrical Laboratory . . . . .	73	Metallurgy . . . . .	57
Precise Surveying—Jurisprudence . . . . .	92	Electrical Laboratory . . . . .	73
English . . . . .		Dynamo-Electric Machinery . . . . .	77
Modern Languages . . . . .		Masonry . . . . .	111
		English . . . . .	
		Modern Languages . . . . .	

## SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Design . . . . .	29	Engineering Laboratory . . . . .	123
Applied Mechanics . . . . .	114	Hydraulics . . . . .	110
Steam Engineering . . . . .	122	Thesis . . . . .	135
Engineering Laboratory . . . . .	123	<i>* Two of the following electives:</i>	
Political Economy . . . . .	180	Mathematics . . . . .	
<i>* Two of the following electives:</i>		Quantitative Analysis . . . . .	61
Mathematics . . . . .		Applied Chemistry . . . . .	65
Quantitative Analysis . . . . .	61	Electricity . . . . .	83
Gas Analysis . . . . .	63	Topics . . . . .	85
Electricity . . . . .	82	Telegraph and Telephone . . . . .	87
Dynamo Design . . . . .	88	Masonry . . . . .	111
Roofs and Bridges . . . . .	97	Structural Design . . . . .	117
Structural Design . . . . .	118	Bridge Design . . . . .	98

\* Electives must be approved by the Department.

**ELECTRICAL ENGINEERING**

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

**ELECTRICAL ENGINEERING**

FRESHMAN YEAR—alike for all courses. See page 113.

**SOPHOMORE YEAR**

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185
		Surveying ( <i>elective</i> ) . . . . .	91

**JUNIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Applied Calculus . . . . .	8	Differential Equations . . . . .	9
Qualitative Analysis . . . . .	52	Machine Design . . . . .	28
Electrical Laboratory . . . . .	73	Electrical Laboratory . . . . .	73
Electricity and Magnetism . . . . .	74	Electricity . . . . .	76
Pure Mechanics . . . . .	112	Dynamo-Electric Machinery . . . . .	77
Experimental Mechanics . . . . .	115	Applied Mechanics . . . . .	113
Steam Engine . . . . .	120	Experimental Mechanics . . . . .	116
<i>* One of the following electives:</i>		<i>* One of the following electives:</i>	
Machine Drawing . . . . .	27	Mathematics . . . . .	
Precise Surveying—Jurisprudence . . . . .	92	Machine Shop . . . . .	45
English . . . . .		Qualitative Analysis . . . . .	53
Modern Languages . . . . .		Metallurgy . . . . .	57
		Fire Protection—Hydrography . . . . .	93
		† Sanitary Engineering . . . . .	109
		Masonry . . . . .	111
		Steam Engineering . . . . .	121
		English . . . . .	
		Modern Language . . . . .	

**SENIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Electrical Laboratory . . . . .	79	Electrical Laboratory . . . . .	79
Electricity . . . . .	82	Electricity . . . . .	83
Political Economy . . . . .	180	Telegraph and Telephone . . . . .	87
<i>* Three of the following electives:</i>		Hydraulics . . . . .	110
Mathematics . . . . .		Thesis . . . . .	135
Machine Design . . . . .	29	<i>* Two of the following electives:</i>	
Quantitative Analysis . . . . .	61	Mathematics . . . . .	
Gas Analysis . . . . .	63	Quantitative Analysis . . . . .	61
Mineralogy . . . . .	59	Applied Chemistry . . . . .	65
Mathematics of Alternating Currents . . . . .	84	Assaying . . . . .	67
Dynamo Design . . . . .	88	Electrical Topics . . . . .	85
Railroad Engineering . . . . .	95	Magnetism . . . . .	86
Applied Mechanics . . . . .	97	Highways . . . . .	99
Roofs and Bridges . . . . .	114	† Sanitary Engineering . . . . .	109
Engineering Laboratory . . . . .	231	Masonry . . . . .	111

\* Electives must be approved by the Department.

† Omitted in 1903—1904.

### CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics and the less technical engineering subjects, have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemical and advanced mechanical engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

**CHEMICAL ENGINEERING**

FRESHMAN YEAR — alike for all courses. See page 113.

**SOPHOMORE YEAR**

FIRST TERM	No.	SECOND TERM	No.
Calculus . . . . .	7	Calculus . . . . .	7
Mechanism . . . . .	25	Machine Drawing . . . . .	26
General Chemistry . . . . .	50	Forging . . . . .	44
Surveying . . . . .	90	General Chemistry . . . . .	50
English . . . . .	142	Physical Laboratory . . . . .	72
French or . . . . .	162	English . . . . .	143
German . . . . .	167	French or . . . . .	162
Physical Training . . . . .	185	German . . . . .	167
		Physical Training . . . . .	185

**JUNIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Applied Calculus . . . . .	8	Differential Equations . . . . .	9
Qualitative Analysis . . . . .	52	Qualitative Analysis . . . . .	53
Organic Chemistry . . . . .	55	Metallurgy . . . . .	57
Electrical Laboratory . . . . .	73	Electrical Laboratory . . . . .	73
Electricity and Magnetism . . . . .	74	Applied Mechanics . . . . .	113
Pure Mechanics . . . . .	112	Experimental Mechanics . . . . .	116
Experimental Mechanics . . . . .	115	<i>* Two of the following electives:</i>	
Steam Engine . . . . .	120	Machine Shop . . . . .	45
		Dynamo-Electric Machinery . . . . .	77
		† Sanitary Engineering . . . . .	109
		Masonry . . . . .	111
		Structural Design . . . . .	117

**SENIOR YEAR**

FIRST TERM	No.	SECOND TERM	No.
Machine Drawing . . . . .	27	Quantitative Analysis . . . . .	61
Mineralogy . . . . .	59	Applied Chemistry . . . . .	65
Quantitative Analysis . . . . .	61	Assaying . . . . .	67
Gas Analysis . . . . .	63	Theoretical Chemistry . . . . .	69
Political Economy . . . . .	110	Hydraulics . . . . .	180
<i>* Three of the following electives:</i>		Thesis . . . . .	135
Mathematics . . . . .	82	<i>* One of the following electives:</i>	
Electricity . . . . .	82	Mathematics . . . . .	28
Roofs and Bridges . . . . .	97	Machine Design . . . . .	109
Applied Mechanics . . . . .	114	† Sanitary Engineering . . . . .	111
Structural Design . . . . .	118	Masonry . . . . .	117
		Structural Design . . . . .	

\* Electives must be approved by the Department.

† Omitted in 1903-1904.



## Departments

---

### MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are embodied in Osborne's Calculus supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Spherical Trigonometry (4) Theory of Least Squares (10) and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of the Potential Function (13) are offered as instruments for investigating the more complex physical phenomena.

## MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra . . . . .	1	1	4	1	Wren	C E M Ch
3	Plane Trigonometry . . . . .	1	1	2	1	Wren	E E M Ch
4	Spherical Trigonometry . . . . .	4	1	3	1	Ransom	Elective
5	Plane Analytic Geometry . . . . .	1	2	3	1	Wren	C E M Ch
7	Differential and Integral Calculus . . . . .	2	1, 2	3	1	Wren	C E M Ch
8	Applied Calculus . . . . .	3	1	2	1	Rockwell	C E M Ch
9	Differential Equations . . . . .	3	2	2	1	Wren	E M Ch
10	Theory of Determinants . . . . .	4	1	3	1	Wren	Elective
11	Theory of Least Squares . . . . .	3 or 4	2	2	1	Wren	Elective
12	Vector Analysis . . . . .	4	1	3	1	Wren	Elective
13	Theory of the Potential Function . . . . .	4	2	3	1	Wren	Elective

## DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for the machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

The classes in both Elementary (26) and Advanced (27) Machine Drawing are conducted according to the methods of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

## DRAWING

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing . . . . .	1	1, 2	$\begin{Bmatrix} 2 \\ 1 \end{Bmatrix}$	$2\frac{1}{2}$ 1	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
21	Descriptive Geometry . . . . .	1	2	3	1	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
22	* Freehand Drawing . . . . .	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching . . . . .	1	2	1	2	$\begin{Bmatrix} \text{Anthony} \\ \text{Ashley} \end{Bmatrix}$	C E M Ch
25	Mechanism . . . . .	2	1	$\begin{Bmatrix} 2 \\ 1 \end{Bmatrix}$	$2\frac{1}{2}$ 1	Anthony	C E M Ch
26	Elementary Machine Drawing . . . . .	2	2	2	2	C. H. Chase	E M Ch
27	Advanced Machine Drawing . . . . .	3	1	2	3	C. H. Chase	M
28	Elementary Machine Design . . . . .	3	2	1	3	Anthony	E, M
29	Advanced Machine Design . . . . .	3	1	2	3	Anthony	M

\* Not required of students entering College with this subject.

### SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

A half-year is given to acquiring experience in the use of the ordinary tools in Carpentry (40) and the use of the tools and lathe in Wood Turning. Following this, moulding or foundry work is taken up in preparation for Pattern Making (42) which constitutes the remainder of the Freshman course. Forging (44) gives an introduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding. In the Junior year instruction in metal work is continued, with vise and Machine Tools (45).

Project Work (48), which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the subject in machine-shop instruction upon special lines.

## SHOPWORK

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	{ Joinery } { Wood Turning } { Foundry }	1	1	2	3	Stewart	C E M Ch
42	Pattern Making . . . . .	1	2	1	3	Stewart	C E M Ch
44	Forging . . . . .	2	2	1	3	Stewart	C E M
45	{ Chipping and Filing } { Machine Tools }	3	2	2	3	C. H. Chase	M
48	Project . . . . .	4	2	3	3	C. H. Chase	Elective

\* Joinery, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks. † Civil Engineers may elect No. 45 in the first term.



### CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations. It may cover the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57) is studied by lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. The lectures relate to technical applications of inorganic and organic chemistry.

## CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	2	3		{ Durkee } { Turner }	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Ganer	Ch
57	Metallurgy (Chemistry 8) . . .	3	2	2	1	50	Durkee	Ch
59	Mineralogy . . .	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Analysis (Chemistry 5)	4	1, 2	2	3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9) . .	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry . . . . .	4	2	2	1	55	Durkee	Ch
67	Assaying (Chemistry 7) . . . .	4	2	2	2	50	Durkee	Ch
69	Theoretical Chemistry (Chemistry 11)	4	2	2	1	50	Eckstein	Ch

**PHYSICS AND ELECTRICITY**

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Work in the Physical Laboratory (72) comprises the more important quantitative determinants in mechanics, sound, light and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Electricity and Magnetism (74) is supplementary to the course in Physics, and affords the requisite preparation for the technical, and more advanced courses that follow.

In Electrical Laboratory (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76); wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

## PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures) . . . . .	1	1, 2	3	1	Dolbear	C E M Ch
72	Physical Laboratory . . . . .	2	2	$\begin{Bmatrix} 1 \\ 2 \end{Bmatrix}$	$\begin{Bmatrix} 1 \\ 3 \end{Bmatrix}$	$\begin{Bmatrix} \text{H. G. Chase} \\ \text{Rollins} \end{Bmatrix}$	C E M Ch
73	Electrical Laboratory . . . . .	3	1, 2	1	4	$\begin{Bmatrix} \text{Hooper} \\ \text{Chase} \\ \text{Rollins} \end{Bmatrix}$	E M Ch
74	Electricity and Magnetism . . . . .	3	1	3	1	H. G. Chase	E M Ch
76	Electricity (Problems) . . . . .	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery . . . . .	3	2	3	1	Hooper	E
79	Electrical Laboratory . . . . .	4	1, 2	2	3	$\begin{Bmatrix} \text{Hooper} \\ \text{Rollins} \end{Bmatrix}$	E

**PHYSICS AND ELECTRICITY**

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these arts and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This subject must be taken in connection with advanced machine design.

## PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
82	Alternating Currents . . . . .	4	1	3	1	Hooper	E
83	Alternating Current Machinery . . . .	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment . . . . .	4	1	3	1	Hooper	Elective
85	Electrical Topics . . . . .	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of .	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone . . . . .	4	2	1	1	Dolbear	E
88	Dynamo Design . . . . .	4	1	2	3	Hooper	Elective



**ENGINEERING—CIVIL AND MECHANICAL**

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, location of contours, stadia surveying, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Precise Surveying (92) comprises the determination of a true meridian by astronomical and solar observations, accurate baseline measurements, a careful system of triangulation, exact computations, plotting, and brief time for Mining Surveying.—Engineering Jurisprudence (92) comprises the judicial functions of surveyors, ownership of surveys, and law of contracts.

Fire Protective Engineering (93) considers modern slow burning construction of buildings, systems of fire protection by automatic sprinklers, hydrants, pumps, and city water supplies, the occupancy, general order and neatness of industrial plants. Two or more visits are made to near-by plants.—Hydrographic Surveying (93) includes the measurement of flow of water and computation of horse-power available, together with a stadia and plane table survey of the river banks.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office-work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying . . . . .	2	1	2	3	{ Sanborn } { Rockwell }	C E M Ch
91	Surveying . . . . .	2	2	2	3	{ Sanborn } { Rockwell }	C
92	Precise Surveying and Engineering Juris- prudence . . . . .	3	1	2	3	Sanborn	C
93	Fire Protective Engineering and Hydro- graphic Surveying . . . . .	3	2	2	3	Sanborn	C
94	Railroad Surveying . . . . .	4	1	2	3	Bray	C
95	Railroad Engineering . . . . .	4	1	3	1	Bray	C
96	Railroads—Economic Locations . . . .	4	2	3	1	Bray	Elective

**ENGINEERING—CIVIL AND MECHANICAL**

Roofs and Bridges (97) is a study of analytical and graphical methods of obtaining the stresses in the modern forms of simple roof and bridge trusses. The comparative merits and economy of the different kinds of trusses are discussed.

Bridge Design (98) is a course in the design of framed structures of wood and steel and includes actual proportioning of parts, and preparation of detailed drawings.

Highways (99) considers the location and construction of roads and streets; physical properties of earth, stone, and pavements; economy of traction, grades, construction and maintenance.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water supply, disposal of sewage and garbage. Well-kept notes are required, and include reports of researches in engineering magazines and books, accounts of visits to laboratories, water works, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, textbooks, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion, and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112. Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject open only to students who have passed satisfactorily in the required mechanics (112 and 113).

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
97	Roofs and Bridges . . . . .	4	1	3	1	Rockwell	C
98	Bridge Design . . . . .	4	2	2	3	Rockwell	Elective
99	Highways . . . . .	4	2	1	1	Bray	C
109	* Sanitary Engineering . . . . .	3, 4	2	3	1	Sanborn	C
110	Hydraulics . . . . .	4	2	3	1	Sanborn	C E M Ch
111	* Masonry . . . . .	3, 4	2	3	1	Bray	C
112	Pure Mechanics . . . . .	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics . . . . .	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics . . . . .	4	1	3	1	Bray	Elective

\* Subjects 109 and 111 are given in alternate years. 111 will be given in 1903-1904, and 109 in 1904-1905.

**ENGINEERING—CIVIL AND MECHANICAL**

In Experimental Mechanics (115, 116) problems are set that require for analysis personal experimentation and correct application of the principles of pure and applied mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus.

Structural Design (117) is an introduction to the subject of design of structures. Simple problems in foundations, wooden roof framing, and riveted connections are thoroughly discussed in class, after which the students make the necessary computations and drawings.

Structural Design (118) is an advanced course in continuation of 117. It is essentially a course in the engineering details of building design,

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers.

Engineering Laboratory (123) includes the adjustment, use, and test of indicators, gauges, and calorimeters; the measurement of power by brakes and dynamometer, and tests of steam and gas engines, and boilers.

Geology (130) is a study, principally in the field, of rocks, minerals, earths, and foundations.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic that has interested the student is developed by extended personal research, design, or experimentation.

## ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics . . . . .	3	1	1	3	{ Sanborn } { Rockwell }	C E M Ch
116	Experimental Mechanics . . . . .	3	2	1	3	{ Bray } { Sanborn }	M
117	Structural Design . . . . .	3	2	2	3	Rockwell	C
118	Structural Design . . . . .	4	1	2	3	Rockwell	Elective
120	Steam Engine . . . . .	3	1	3	1	C. H. Chase	C E M Ch
121	Steam Engineering . . . . .	3	2	3	1	Bray	M
122	Steam Engineering . . . . .	4	1	3	1	{ Bray } { C. H. Chase }	M
123	Engineering Laboratory . . . . .	4	1, 2	2	3	{ Bray } { C. H. Chase }	M
130	Geology . . . . .	3, 4	2	3	1, 2	Richards	Elective
135	Thesis . . . . .	4	2	2	4		C E M Ch



## ENGLISH

English is required throughout the Freshman and Sophomore years, the aim being to help the student (1) in developing the power of thinking for himself and expressing his thoughts accurately, clearly, and interestingly; (2) in getting some acquaintance with the best English literature, including the literature of science.

English 140 is a general introduction, English 141 a Study of Expression, English 142 a brief historical survey of English literature, and English 143 a study of technical and scientific writing. In English 144 and 145 the work consists in writing theses in conference with the instructor, the subjects of the theses being determined by the needs of the individual student.

Each of the required subjects is presented by lectures and weekly or bi-weekly conferences, and in each subject the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, as far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

English 144, 145, and the following subjects given in the College of Letters are approved electives for the Junior year.

English 5 (146) is Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week.

English 13 (148), The English Romantic Movement in Poetry. Lectures, reading, brief critical essays.

English 14 (149), Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class.

English 15 (150), Prose of the Nineteenth Century. Lectures, reading, brief critical essays.

## ENGLISH

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English . . . . .	1	1	2	1	Earle	C E M Ch
141	English . . . . .	1	2	3	1	Whittemore	C E M Ch
142	English . . . . .	2	1	3	1	Earle	C E M Ch
143	English . . . . .	2	2	1	1	Earle	C E M Ch
144	English . . . . .		1			Earle	Elective
145	English . . . . .		2			Earle	Elective
146	English 5 . . . . .		1	1	1	Shipman	Elective
148	English 13 . . . . .		1	3	1	Maulsby	Elective
149	English 14 . . . . .		2	3	1	Maulsby	Elective
150	English 15 . . . . .		1, 2	3	1	Whittemore	Elective

### MODERN LANGUAGES

For admission to the Engineering Department, an elementary knowledge of French or German (see pages 44, 45,) is required. Students failing to receive credit for this may enter French 160. Those who have fulfilled the conditions stated on page 48, 49, will be given advanced credit, but advanced credit for a language not continued in College, or credit for more than three years' work, will be given only on examination.

The work required of candidates for the degree of S.B. in Engineering is as follows :

1. Those having fulfilled the regular entrance requirements will continue the language offered, during the Freshman and Sophomore years.
2. Those having received credit for both languages may pursue either language for two years or each for one year.
3. Those having received advanced credit in one will study the alternative language for two years.
4. Those having received advanced credit in both will be required to take only one year of language in College.

Those in class 2 who receive grade B in each language, and those in 3 or 4 who take an advanced subject in French or German and receive grade B may count one subject (six term-hours) also as an elective.

### POLITICAL ECONOMY

Political Economy 180, designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

### PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.

## MODERN LANGUAGES

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
160	French, Elementary . . . . .		1, 2	5	1	Earle	
161	French, Intermediate . . . . .	1	1, 2	3	1	Hayden	C E M Ch
162	French, Advanced . . . . .	2	1, 2	3	1	Hayden	C E M Ch
165	German, Elementary . . . . .		1, 2	3	1	Colwell	
166	German, Intermediate . . . . .	1	1, 2	3	1	Colwell	C E M Ch
167	German, Advanced . . . . .	2	1, 2	3	1	Fay	C E M Ch

## OTHER SUBJECTS

180	Political Economy . . . . .	4	1	3	1	Metcalf	C E M Ch
185	Physical Training . . . . .	1, 2	1, 2†	3	1	Stroud	C E M Ch

† From the middle of November to the middle of March.

## TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

## MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	M Dn 29
JUNIOR	Cal 8	Chm 55	StEn 120	ElMg 74	<i>a</i> PSv 92 <i>b</i> ElLb 73 2 to 6
SOPH	Eng 142	<i>a</i> Sv 90	<i>a</i> Sv 90	<i>a</i> Sv 90	<i>b</i> Sv 90
FRESH	Ger 166 <i>b</i> Frn 161 <i>a</i> Alg 1 AlgB-P	Ger 165 <i>a</i> Frn 161 <i>b</i> Alg 1 Frn 160	Phs 70	Dwg 20	<i>a</i> Dwg 20 2 to 4.30 <i>b</i> Sh 40

## WEDNESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	MDn 29 StDn 118
JUNIOR	Cal 8	Chm 55	StEn 120	ElMg 74	MDwg 27
SOPH	Eng 142	<i>a</i> Sv 90	<i>a</i> Sv 90	<i>a</i> Sv 90	Chm 50
FRESH	Ger 166 <i>b</i> Frn 161 <i>a</i> Alg 1 AlgB-P	Ger 165 <i>a</i> Frn 161 <i>b</i> Alg 1 Frn 160	Phs 70		<i>a</i> Dwg 20 2 to 4.30 <i>b</i> Sh 40

## FRIDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	StDn 118
JUNIOR	MDwg 27	MDwg 27 Chm 55	StEn 120	ElMg 74	<i>a</i> PSv 92 <i>a</i> ElLb 73 2 to 6
SOPH	Eng 142	<i>c</i> Sv 90	<i>c</i> Sv 90	<i>c</i> Sv 90	Chm 50
FRESH	Ger 166 <i>b</i> Frn 161 <i>a</i> Alg 1 Alg B-P	Ger 165 <i>a</i> Frn 161 <i>b</i> Alg 1 Frn 160	Phs 70		<i>c</i> Dwg 20 2 to 4.30 FDwg 22 2 to 4

## TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

## TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
Senior	El 82 REn 95	ELb 79	ELb 79	ELb 79	DyDn 88 EnLb 123
Junior	Mch 112	<i>b</i> PSv 92 <i>a</i> MSh 45	<i>b</i> PSv 92 <i>a</i> MSh 45	<i>b</i> PSv 92 <i>a</i> MSh 45	Chm 52
Soph	Ger 167 <i>a</i> Frn 162 <i>b</i> Cal 7	<i>b</i> Frn 162 <i>a</i> Cal 7	<i>a</i> Mchm 25 <i>b</i> Mchm 25	<i>a</i> Mchm 25 <i>b</i> Mchm 25	<i>c</i> Sv 90
Fresh	Eng 140	<i>c</i> Sh 40 Gm B-P	<i>c</i> Sh 40 <i>a</i> Tr 3	<i>c</i> Sh 40 <i>b</i> Tr 3 Frn 160	<i>b</i> Dwg 20 2 to 4:30 <i>a</i> Sh 40

## THURSDAY

Senior	El 82 REn 95	ELb 79 RSv 94	ELb 79 RSv 94	ELb 79 RSv 94	DyDn 88 RSv 94
Junior	Mch 112	<i>b</i> ExMch 115 <i>a</i> MSh 45	<i>b</i> ExMch 115 <i>a</i> MSh 45	<i>b</i> ExMch 115 <i>a</i> MSh 45	Chm 52
Soph	Ger 167 <i>a</i> Fr 162 <i>b</i> Cal 7	<i>b</i> Fr 162 <i>a</i> Cal 7	<i>a</i> Mchm 25 <i>b</i> Mchm 25	<i>a</i> Mchm 25 <i>b</i> Mchm 25	<i>b</i> Sv 90
Fresh	E g B-P	<i>c</i> Sh 40 Gm B-P	<i>c</i> Sh 40 <i>a</i> Tr 3	<i>c</i> Sh 40 <i>b</i> Tr 3	<i>b</i> Dwg 20 2 to 4:30 <i>a</i> Sh 40

## SATURDAY

Senior	El 82 RE 95	ELb 123	ELb 123	ELb 123	
Junior	Mch 112	<i>b</i> PSv 92 <i>a</i> ExMch 115	<i>b</i> PSv 92 <i>a</i> ExMch 115	<i>b</i> PSv 92 <i>a</i> ExMch 115	
Soph	Ger 167 <i>a</i> Frn 1 <i>b</i> Cal 7	<i>b</i> Fr 162 <i>a</i> Cal 7	Mchm 25 Mchm 25	<i>a</i> Mchm 25 <i>b</i> Mchm 25	
Fresh	Eng 140	GmB-P	<i>a</i> Alg 1 Frn 169	<i>b</i> Alg 1	



## TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

## MONDAY

	8:45	9:45	10:45	11:45	2 to 5
FRESH   SENIOR		Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121	DfEq 9	bElLb 73 2 to 6 aMSh 45
SOPH	Eng 143	aSv 91 bFSh 44	aSv 91 bFSh 44	aSv 91 bFSh 44	bSv 91 aFSh 44
FRESH   SENIOR	Ger 166 bFrn 161 aAnlt 5 Alg B-P	Ger 165 aFrn 161 bAnlt 5 Frn 160	Phs 70	Dwg 20	aDwg 20 2 to 4.30

## WEDNESDAY

FRESH   SENIOR		Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121 Chm 57	ElPb 76	MDn 28 StDn 117
SOPH	PhsLb 72	aSv 91 cFSh 44	aSv 91 cFSh 44	aSv 91 cFSh 44	Chm 50
FRESH   SENIOR	Ger 166 bFrn 161 aAnlt 5 Alg B-P	Ger 165 aFrn 161 bAnlt 5 Frn 160	Phs 70		aDwg 20 2 to 4.30 bPSh 42

## FRIDAY

FRESH   SENIOR	Hghs 99	Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121 Chm 57	DfEq 9	aElLb 73 2 to 6 bMSh 46 StDn 117
SOPH	Eng 143	bSv 91	bSv 71	bSv 91	Chm 50
FRESH   SENIOR	Ger 166 bFrn 161 aAnlt 5 Alg B-P	Ger 165 aFrn 161 bAnlt 5 Frn 160	Phs 70		TcSk 23 2 to 4

## TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed  $\alpha$ ,  $\beta$ ,  $\epsilon$ , signify divisions

## TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
FRESH   SOPH   JUNIOR   SENIOR	Hyd 110	ElLb 79	ElLb 79	ElLb 79	BrDn 98 EnLb 123
	ApMch 133	$\alpha$ ExMch 116 $\beta$ MSh 45	$\alpha$ ExMch 116 $\beta$ MSh 45	$\alpha$ ExMch 116 $\beta$ MSh 45	HSv 93 Chm 53
	Ger 167 $\alpha$ Frn 162 $\beta$ Cal 7	$\beta$ Frn 162 $\alpha$ Cal 7			PhsLb 72
	Eng 141	GmB-P	$\alpha$ DsGm 21 $\beta$ DsGm 21	$\alpha$ DsGm 21 $\beta$ DsGm 21	$\beta$ Dwg 20 2 to 4.30 $\alpha$ PSh 42

## THURSDAY

	Hyd 110	ElLb 79	ElLb 79	ElLb 79	BrDn 98 EnLb 123
FRESH   SOPH   JUNIOR   SENIOR	ApMch 113	$\beta$ ExMch 116	$\beta$ ExMch 116	$\beta$ ExMch 116	HSv 93 $\alpha$ MSh 45 Chm 53
	Ger 167 $\alpha$ Frn 162 $\beta$ Cal 7	$\beta$ Frn 162 $\alpha$ Cal 7	MDwg 26	MDwg 26	PhsLb 72
	Eng 141	GmB-P	$\alpha$ DsGm 21 $\beta$ DsGm 21	$\alpha$ DsGm 21 $\beta$ DsGm 21	$\beta$ Dwg 20 2 to 4.30 $\epsilon$ PSh 42

## SATURDAY

	Hyd 110	Ths 135	Ths 135	Ths 135	
FRESH   SOPH   JUNIOR   SENIOR	ApMch 113			ElPb 76	
	Ger 167 $\alpha$ Frn 162 $\beta$ Cal 7	$\beta$ Frn 162 $\alpha$ Cal 7	MDwg 26	MDwg 26	
	Eng 141	Frn 160	$\alpha$ DsGm 21 $\beta$ DsGm 21	$\alpha$ DsGm 21 $\beta$ DsGm 21	



THE GRADUATE  
DEPARTMENT



## Faculty of the Graduate Department

---

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT

J. STERLING KINGSLEY, Sc.D., DEAN

*Professor of Biology*

HARRY G. CHASE, B.S., SECRETARY

BENJAMIN G. BROWN, A.M.\*

*Walker Professor of Mathematics*

CHARLES E. FAY, Litt.D.

*Wade Professor of Modern Languages*

ARTHUR MICHAEL, A.M., Ph.D.

*Professor of Chemistry*

WILLIAM L. HOOPER, A.M., Ph.D.

*Professor of Electrical Engineering*

ARTHUR E. AUSTIN, A.B., M.D.

*Professor of Medical Chemistry*

DAVID L. MAULSBY, A.M.

*Professor of English Literature*

GEORGE VAN NESS DEARBORN, A.M., Ph.D., M.D.

*Assistant Professor of Physiology*

WILLIAM K. DENISON, A.M.

*Professor of the Latin Language and Literature*

LAWRENCE B. EVANS, Ph.D.

*Professor of History*

HENRY C. METCALF, Ph.D.

*Jackson Professor of Political Science*

CHARLES ST. CLAIR WADE, A.M.

*Professor of the Greek Language and Literature*

FRANK G. WREN

*Professor of Mathematics*

---

\* Deceased.



**STANDING COMMITTEES OF THE GRADUATE DEPARTMENT**

EXECUTIVE: Professor Kingsley, *Chairman*; Professors Hooper and Denison.

REQUIREMENTS FOR DEGREES: Professor Kingsley, *Chairman*; Professors Evans and Michael.

# The Graduate Department

---

## INSTRUCTION

Graduate instruction is given by members of the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

## DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

ENGLISH,	MATHEMATICS,
MODERN LANGUAGES,	CHEMISTRY,
ANCIENT LANGUAGES,	PHYSIOLOGICAL CHEMISTRY,
HISTORY AND PUBLIC LAW,	BIOLOGY,
POLITICAL SCIENCE,	PHYSIOLOGY,
ELECTRICITY.	

The degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions, which are enumerated below (pages 160, 161) in connection with the

several departments. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Graduate Faculty.

The thesis must be ready at least one month before Commencement, at which time the student must make written application to the Secretary to be considered as an applicant for the degree.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

#### **DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS**

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7\*, 10, 17, 18, 19, 20, 23, 24, 25, and 26, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or

\* See "Departments of Instruction," pages 60 to 62.

literary criticism. It may consist of the intensive study of an author or a period. Frequently the use of German and French is necessary.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, courses 1, 2, 3, 4 or 5; for Latin, courses 1, 2, 3, or 4, and 5, or equivalents.\* It is desirable that candidates for this degree in either of the ancient languages present the other as a minor subject. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 7, 8, 9, and 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period or of some philological or archaeological subject. A reading knowledge of French and German is indispensable.

\* See "Departments of Instruction," pages 67 to 70.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, or their equivalent.\* The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.—Graduate students in Mathematics must have acquired a working knowledge of the Calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included.† Candi-

\* See "Departments of Instruction," pages 75, 76.

† See "Departments of Instruction," page 81.



dates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in subjects 3 to 6 inclusive, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of two years' work in General Chemistry, Basic and Acid Qualitative Analysis, and the outlines of Organic Chemistry (Subjects 1, 2, 3, and 10 of Tufts College, or their equivalent).\*

To obtain the degree of Master of Arts the applicant must have done satisfactory work in at least five of the subjects, numbered 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, and must also present a satisfactory thesis and pass a satisfactory examination in all the subjects studied.

PHYSIOLOGICAL CHEMISTRY.—The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use the polariscope, spectroscope, and microscope intelligently.

The course is one of laboratory work wholly, under the personal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research. The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with

---

\* See "Departments of Instruction," pages 85, 86.

simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

**BIOLOGY.**—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (courses 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German.\* The work offered for advanced degrees is in the lines of comparative anatomy, and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

**ELECTRICITY.**—As a preparation for graduate work in electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge of physics, including elementary electrical tests (Physics 1 to 5 of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 1, 2, 3, 4, 5, and 8,† and the preparation of an acceptable thesis involving original research.

---

\* See "Departments of Instruction," page 87.

† See "Departments of Instruction," pages 82, 83,

## DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

**CHEMISTRY.**—To obtain the degree of Doctor of Philosophy the candidate must have at the beginning a good working knowledge of German. He must (unless previously qualified) take subjects 4 to 7, 9 to 15, and 17, and devote at least a year to subject 16.\* Examinations in the above subjects must be satisfactorily passed, and an acceptable thesis, embodying an original investigation in Chemistry, must be presented.

**BIOLOGY.**—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

**HISTORY AND PUBLIC LAW.**—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History 1, 2, and 3, and Public Law 1.† For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details,

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

\* See "Departments of Instruction," pages 85, 86.

† See "Departments of Instruction," pages 75 to 77.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

### FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

## SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work, each scholarship giving free tuition to the incumbent, who is expected to devote himself exclusively to advanced study. Details concerning these scholarships may be obtained from the Secretary, to whom also all applications should be addressed.

## TUITION

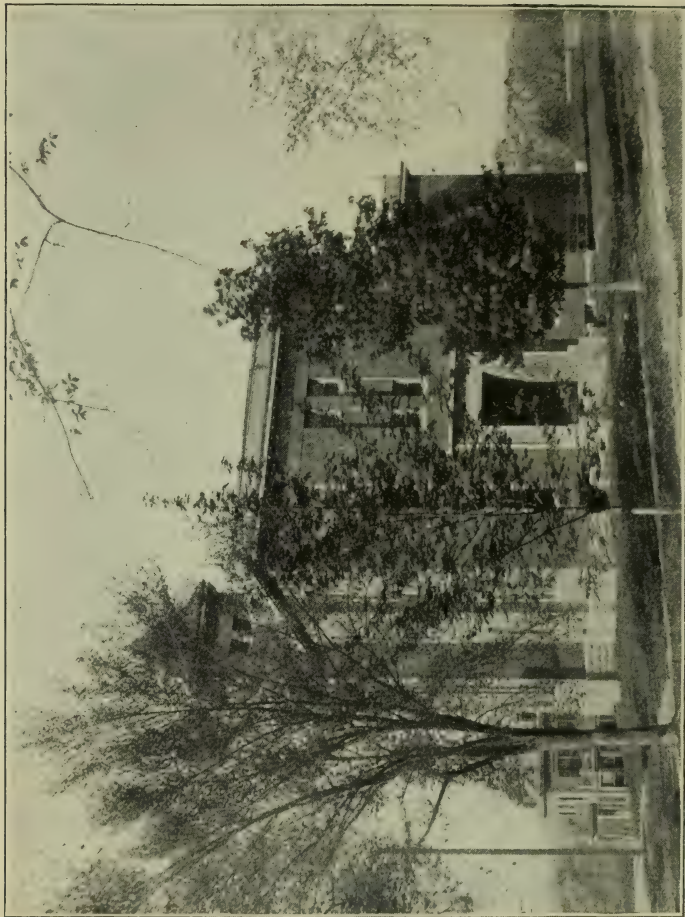
The tuition fee for the whole course for the degree of Master of Arts, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.







METCALF HALL

## Buildings and Equipment

---

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

### LIBRARY

The library contains about forty-eight thousand bound volumes and thirty-three thousand two hundred pamphlets. The College regularly receives more than two hundred periodicals. By favor of Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five years, has been about twenty-three hundred and fifty volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the

collection of the Universalist Historical Society (fifty-four hundred volumes and several thousand pamphlets), to which, on application, students have free access ; in the Barnum Museum is the department library of Natural History, numbering about seventeen hundred volumes and more than forty-eight hundred pamphlets ; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about fifty-six thousand bound volumes available for use.

### BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance, and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facili-

ties, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

### GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well fitted for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing machines, a large wrestling mat, and facilities for basket ball. The gallery contains a running-track, one thirty-second of a mile in length. There is also a well lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

### CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

### ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

**PHYSICAL LABORATORIES.** The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, chronograph, and spectrometer from the Société Gènevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is used for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

**ELECTRICAL LABORATORIES.** The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.



### BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school. It is used also for the department of drawing and for the shop-work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are forge, moulding, pattern, and machine shops. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shops, and also serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

### THE POWER STATION

The Power Station is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering.

The engine-room contains a twenty-five horse-power Sturtevant engine directly coupled to a Mordey Alternator, a forty horse-power Harrisburg Standard engine directly coupled to a direct-current General Electric generator, and a ten horse-power Columbia gas engine belted to a direct current generator. A storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

### THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms



for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

## General Information

---

### RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

### TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work, done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Eight numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Develop-

ment of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in *Sterna Wilsoni*," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,' " by D. L. Maulsby; "The Ossicula Auditus," by J. S. Kingsley; "The Development of the Eye Muscles in *Acanthias*," by Arthur B. Lamb; "The Cranial Nerves of *Amphiuma*," by J. S. Kingsley; and "The Systematic Position of the Cæcilians," by J. S. Kingsley. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

### REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by advisors, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made in accordance with the following schedule:—

9-10 A.M.—All students except those in the Engineering Department will present themselves at the Secretary's office between these hours, and receive cards and assignments.

10-12 A.M.—All students, with the exception of members of the Freshman class, will meet their major instructors in accordance with assignments.

12-1 P.M.—Members of the Freshman class will meet their advisors in accordance with assignments.

2-4 P.M.—During this period students may consult instructors and file registration cards. All cards must be in the hands of the Registrar at or before four o'clock.

Arrangements for consultation may be made by individual students, toward the close of the first term.

Students will make their plans of study subject to the following regulations :—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required.

Registration is made in accordance with the following schedule :—

10-12 A.M.—Students will register at the Secretary's office between these hours.

9-12 A.M.—During this time the instructors in the department may be consulted.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

### PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12.30 P.M. on the second day of the first half-year, and at 4 P.M. on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

The numbering of new subjects is to be determined by the Committee on Program in consultation with the respective instructors.

### PROMOTIONS

Students in the courses leading to the degrees of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

### MAJOR SUBJECTS

Each student shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

### ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

### SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.
2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.
3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.
4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.



### TERMS AND VACATIONS

The college year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

### ABSENCES

In case of absence, from any cause, involving more than three consecutive program appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

### EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of

students on and after the Wednesday of the week preceding the opening of the college year. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars, in return for which a place for study is provided in Ballou Hall, or elsewhere.

Every student is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of .four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

Students may deposit with the Bursar money for safe keeping. A receipt will be given, and the money, or any part of it, may be withdrawn on demand.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following college year; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in commons at \$3.75 per week; in private families at \$3.50 to \$5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition . . . . .	\$100.00	\$100.00
Physical Culture, including gymnasium and grounds . . . . .	10.00	10.00
Reading-room . . . . .	1.00	1.00
Hospital . . . . .	2.00	2.00
Board, \$3.50 to \$5.00 a week (36 weeks) . . . . .	126.00	180.00
Total . . . . .	\$239.00	\$293.00

For the expenses of students of Engineering, consult the table of contents, under "Department of Engineering."

### OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

### SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

*Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.*

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me. This scholarship is not available during the present year.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.



THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens. •

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP.—Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.



THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

THE MARY AND LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Mary G. Knight of Roxbury, for the benefit of women.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Roxbury.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William R. Sherman, of Boston.

The following scholarships of fifty dollars each are awarded annually :—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years of his course, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

APPOINTMENTS.—The pay of a chapel monitor is *fifty dollars* a year; that of the organist, *one hundred and fifty dollars*.

### PRIZES

GODDARD PRIZES.—In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the *Agricola* of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the *Ars Poetica* of Horace.

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,—the first Wednesday after the Thanksgiving recess.

### COMMITTEE OF INFORMATION

It is the object of the Committee of Information to bring the student body in touch with the business and professional world by supplying information concerning positions that are available for graduates, or that may be temporarily filled by undergraduates during the summer vacation. By a systematic record, in which undergraduates and alumni coöperate, information is gratuitously at the disposal of both employer and employed.

### HONORS AND DEGREES

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the College of Letters who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (\*) will not count for Honors. Those marked with a double asterisk (\*\*) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.
2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.
3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: ELECTRICITY.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department.

Subjects marked in the Catalogue with an asterisk (\*) or with a double asterisk (\*\*) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

THE DEGREE OF BACHELOR OF ARTS, will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 56 to 58.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the Course in General Science, the Course in Biology, or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 101 to 105.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, will be conferred upon students who shall have completed the required course, as defined on pages 113 to 121.

Students of the courses in the College of Letters may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, after a graduate course of one year in the Engineering Department.

For the advanced degrees of MASTER OF ARTS, MASTER OF SCIENCE, and DOCTOR OF PHILOSOPHY, see announcement of the Graduate Department, pages 153 to 161.

# THE DIVINITY SCHOOL





# Faculty of the Divinity School

---

ELMER H. CAPEN, D.D., LL.D., PRESIDENT

*Professor of Moral Philosophy and Political Economy*

CHARLES H. LEONARD, A.M., D.D., DEAN

*Goddard Professor of Homiletics and Pastoral Theology*

HARRY G. CHASE, B.S., SECRETARY

WILLIAM R. SHIPMAN, A.M., D.D., LL.D.

*Goldthwaite Professor of Rhetoric, and Professor of Logic*

EDWIN C. BOLLES, PH.D., D.D.

*Dickson Professor of English and American History*

WILLIAM G. TOUSEY, A.M., D.D.

*Ryder Professor of Ethics and the Philosophy of Theism*

GEORGE T. KNIGHT, A.M., D.D.

*Packard Professor of Christian Theology*

GEORGE M. HARMON, A.M., D.D.

*Professor of Biblical Theology*

WARREN S. WOODBRIDGE, A.M., B.D.

*Woodbridge Professor of Applied Christianity*

J. STERLING KINGSLEY, S.D.

*Professor of Biology*

HERBERT E. CUSHMAN, B.D., A.M., PH.D.

*Professor of Philosophy*

DAVID L. MAULSBY, A.M.

*Professor of English Literature and Oratory*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English*

HENRY C. METCALF, A.B., PH.D.

*Professor of Political Science*

LAWRENCE B. EVANS, PH.D.

*Professor of History*

CHARLES ST. CLAIR WADE, A.M.

*Professor of Greek Language and Literature*

CHARLES C. STROUD, A.B., M.D.

*Instructor in Physical Training*

**NON-RESIDENT LECTURERS**

FREDERICK W. HAMILTON, A.M., D.D.

*The Vocation of the Preacher*

HENRY W. RUGG, D.D.

*Christian Missions*

BYRON GROCE, Litt.D.

*The Preacher as Teacher*

HAROLD WILLIAMS, A.M., M.D.

*The Care of the Body*

CHARLES CONKLIN, A.M., B.D.

*The Work of the Minister*

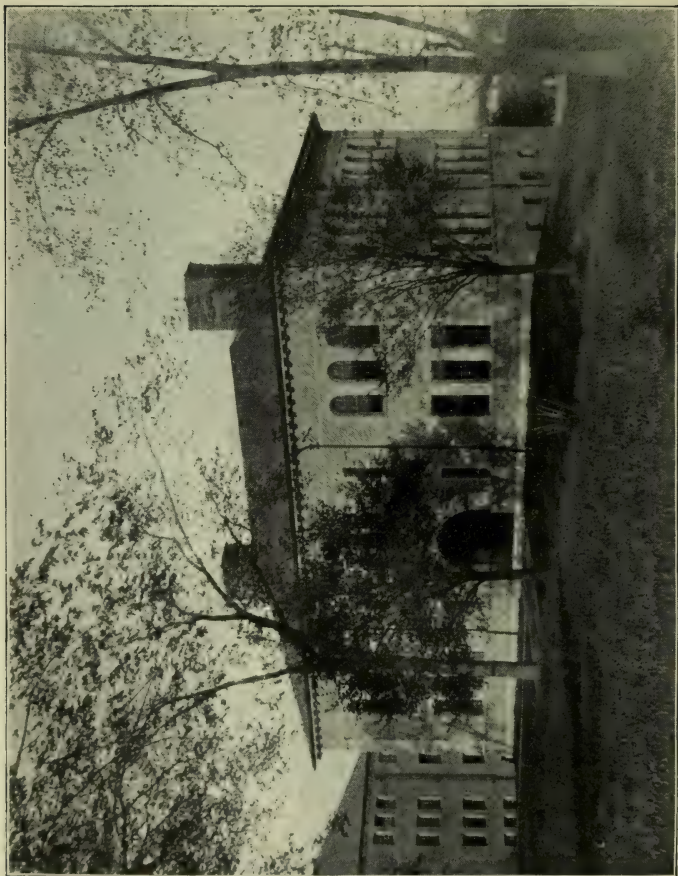
---

**COMMITTEE ON PROMOTIONS**

Dean Leonard, *Chairman* ; Professors Metcalf and Knight.

THE  
JOHN C.  
LIBRARY

THE  
JOHN CRERAR  
LIBRARY.



MINER HALL

## **The Divinity School**

---

The Divinity School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

### **CONDITIONS OF ADMISSION**

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts whose course of study has included Greek are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their college course differs from the A. B. course.

3. Undergraduates who enter for a degree must conform to the regular conditions of admission to the College of Letters as stated above, see pages 41 to 55.

4. Special students, not candidates for a degree, may be admitted, in accordance with the general custom of the College, to such departments of the regular work of the School as they are fitted to undertake.

---

## **Requirements for the Degree of Bachelor of Divinity**

The College of Letters has lately decided that certain studies, hitherto pursued in the Divinity School only, are properly regarded as culture studies, and therefore offers them to all its students. Taking advantage of this fact, the student who enters College with Greek, and with other good preparation, may so



shape his course as to obtain the degree of Bachelor of Arts in four years, and that of Bachelor of Divinity in one more year.

Graduates from other institutions may obtain the degree of Bachelor of Divinity after having completed those parts of the course of this School which have not been included in their previous studies. The time thus required for those holding the degree of A.B. is three years or less.

In all cases, however, the ground of promotion and of graduation is the intellectual attainment of the individual student, and not a fixed requirement of a certain number of years of study, except that no degree will be granted for less than one year of resident work.

### SYNOPSIS OF THE REQUIREMENTS FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	TERM HOURS
LANGUAGE (Hebrew, Greek, and German) . . . . .	24
SCIENCE (Mathematics, Physics, and Biology) . . . . .	18
HISTORY (Civil and Religious) . . . . .	27
BIBLE (Language, History, etc.) . . . . .	33
PHILOSOPHY (Psychology, Logic, Ethics, Systematic Theology, etc.) . . . . .	33
SOCIOLOGY (Law, Economics, and Applied Christianity) .	30
ENGLISH (Rhetoric, Literature, Oratory, and Homiletics) .	36
PHYSICAL TRAINING . . . . .	2
Total . . . . .	203
Deduct (counted twice) . . . . .	15
Total term hours . . . . .	188

In order to do in five years the work included in this synopsis, the student must begin the prescribed course with his Freshman year, and must manifest ability to carry with profit so heavy a program. He may receive A.B. at the end of four years, or with B.D. at the end of his course, as he may choose.

For all divinity students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Divinity School, or some appointed representative from the Divinity Faculty.

## Departments of Instruction

---

Following is a statement of subjects of study selected from the statement for the College of Letters, the numbering and other marking being preserved for convenient reference. Those subjects are selected which are most likely to be chosen by the student who is preparing for the Christian ministry. A fuller statement is made (pages 192 to 199 ) mainly of those subjects that are specially related to the minister's profession. The student should understand, however, that all the work offered in the College of Letters is open to him, under the usual regulations.

### ENGLISH

See subjects 1, 2, 5, 10, 11, 12, and 27, on pages 60 to 62 of this catalogue.

### ORATORY

See subjects 1 and 2, pages 62, 63.

### GERMAN

See subjects 1 to 3B, pages 63, 64.

### GREEK

See subjects 1 and 2, pages 68, 69.

### HEBREW

See subjects 1 and 2, page 71.

### PHILOSOPHY

See subjects 1 to 8, pages 71 to 73.

### HISTORY

See subjects 1 to 5, and 11 to 14, pages 74 to 77.

### PUBLIC LAW AND ADMINISTRATION

See subjects 1 to 6, pages 77, 78.

### POLITICAL SCIENCE

See subjects 1 to 3, pages 78, 79.

**MATHEMATICS**

See subject 1, page 80.

**PHYSICS**

See subject 1, pages 81, 82.

**BIOLOGY**

See subject 1, pages 86, 87.

**PHYSICAL TRAINING**

See page 95.

**OLD TESTAMENT**

## PROFESSOR WOODBRIDGE

The aim is to secure, chiefly through the English version, a working knowledge of the Old Testament, and an appreciative acquaintance with Hebrew thought and life. The course includes a history of the Book, a history of the people from whose literature the Book was made, a history of the literature itself in the separate books and in its development and forms, and critical and interpretative readings of the literature. Hebrew is offered as the foundation of a more critical study,

## SUBJECTS

1. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. [History 11\*] *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

2. General Introduction: the English Bible, other versions, the manuscripts, the canon. Special Introduction: history of the literature, origin of particular books. *Mon., Wed., Fri., 9.45. (1)* PROFESSOR WOODBRIDGE.

3. The Hebrew Language [Hebrew 1†]: the elements of grammar. Translation of portions of Genesis, of the book of Ruth, and other selections. *Tu., Th., Sat., 11.45.* PROFESSOR WOODBRIDGE.

4. Hebrew Language [Hebrew 2†]: syntax, critical readings from the Historical Books, from the Prophets, and the Psalms. *Three hours a week.* PROFESSOR WOODBRIDGE.

5. (a) Principles of Criticism; Critical Analysis of Genesis; the Pre-exilic Prophets; Isaiah, with special reference to Authorship and Date; Readings from the Wisdom Literature. (1902-1903.) (b) The Development of Hebrew Law; the Prophets of the Exile; Post-exilic Literature; Hebrew Poetry. (1903-1904.) *Tu., Th., Sat., 8.45.* PROFESSOR WOODBRIDGE.

\* See page 76.

† See page 71.

## NEW TESTAMENT

PROFESSOR HARMON

1. New Testament History [History 12\*]. This subject covers the history of the Jews during the lifetime of Jesus, including their relations to the Roman government, and their political, social, and religious institutions and customs. It also includes the origin, extension, and development of the Christian Church until the destruction of Jerusalem. Incidentally these results form the historical background for the study of the New Testament literature. The method includes lectures, references to sources of information in the library, reports in the class-room of results gathered from such sources, and frequent oral and written examinations.

2. New Testament Criticism. This subject covers the investigation of the origin and character of the Gospels and the apostolic literature, the aim being to acquire an understanding of the general conditions essential to the correct interpretation of the New Testament writings. The method pursued is the same as in New Testament History.

3. New Testament Exegesis. The work consists of lectures on methods of interpretation, followed by an examination of the Synoptic Gospels in the Greek, with the object of acquiring a knowledge of the ministry and teachings of Jesus. It includes also a study of the Pauline Epistles and the Johannine literature.

## SUBJECTS

1. History of the beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 3.00. (1)*  
PROFESSOR HARMON.

2. New Testament Criticism. *Mon., Wed., Fri., 9.45. (2)*  
PROFESSOR HARMON.

3. New Testament Exegesis and Theology. *Mon., Wed., Fri., 11.45.*  
PROFESSOR HARMON.

---

\* See page 76.

**HISTORY OF RELIGIONS**

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions [History 13\*]. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are in the library. They embrace the important authorities, both original and secondary.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, of ancient and modern India, China, Japan, and Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

2. The history of Christianity: Church History [History 14†].

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

---

\* See page 76.

† See page 77.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities.

#### SUBJECTS

1. The Non-Christian Religions: Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (1)

PROFESSOR KNIGHT.

2. Church History: History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Tu., Th., Sat., 9.45.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT

#### ETHICS

[Philosophy 5, 7, 8. See pages 72, 73.]

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionism, naturalism, and determinism are studied, not



merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

A course is also offered in the history of ethical speculation, and of the development of moral customs and ideas. Finally, the bearing of ethical theory on the leading problems of the individual and the social life is discussed, particular attention being given to such subjects as duties, rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

#### SUBJECT

1. The Moral Nature; Ethical Theory; Evolution of Morals; Practical Ethics; Ethics and Theism. *Mon., Wed., Fri., 10.45.* PROFESSOR TOUSEY.

2. Ethics, Historical and Critical. History of Ethical Speculation; development of moral customs and ideals. *Mon., Wed., Fri., 10.45. (2)*

PROFESSOR TOUSEY.

3. Ethics, Applied. *Tu., Th., Sat. 10.45. (2)* PROFESSOR TOUSEY.

#### PHILOSOPHY OF THEISM

[Philosophy 14. See page 74.]

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the final problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as

texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

#### SUBJECT

1. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.*

PROFESSOR TOUSEY.

#### THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages:—

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

*b.* The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

*c.* The organization of the results into a scientific product.

*d.* Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

## SUBJECTS

1. Historical Introduction. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR KNIGHT.

2. Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. [Philosophy 15.\*] *Tu., Th., Sat., 11.45.*

PROFESSOR KNIGHT.

## APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the life of the world. The objective point is the efficiency of pastor and church in the function of social uplift. The course covers one year, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

## SUBJECT

1. The Relations of the Church to the Life of the Individual and to Social Problems. *Mon., Wed., Fri., 4.00.*

PROFESSOR WOODBRIDGE.

## HOMILETICS

PROFESSOR LEONARD

The course in Homiletics covers two years. The first year [English 27†] is devoted to the sermon as a literary production; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts. In the main, the work of this year is given to the theoretical part of the study.

The second year is devoted to the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of ser-

\* See page 74.

† See page 62.

mons, which are criticised by the class and by the professor; lectures on invention and arrangement of material, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

#### SUBJECTS

1. The Idea and Structure of the Sermon; Homiletical Analysis · Studies in Plans. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.
2. The Composition and Delivery of Sermons; Lectures on Preaching. *Tu., Th., Sat., 9.45.* PROFESSOR LEONARD.

### PASTORAL THEOLOGY

PROFESSOR LEONARD

The course in Pastoral Theology considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications — spiritual, mental, social — of a good pastor, the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminars are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

#### SUBJECT

1. The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Tu., Th., Sat., 8.45. (2)* PROFESSOR LEONARD.

## Summary

---

A synopsis of the Course of Study (for one who enters with Greek and Latin) leading to A.B. in four years, and B.D. in one more year, embracing all the regular requirements for both degrees :—

### FRESHMAN YEAR

SUBJECT	INSTRUCTOR	TIME
Mathematics 1a . . . . .	Ransom	Tu. Th. Sat. 8.45
German 1 . . . . .	Colwell	Mon. Wed. Fri. 9.45
Greek 2 . . . . .	Wade	Mon. Wed. Fri. 2.00
Physics 1 . . . . .	Dolbear	Mon. Wed. Fri. 10.45
Old Testament 1 [History 11] . .	Harmon	Mon. Wed. Fri. 4.00
English 1 and 2 . . . . .	Maulsby and Whittemore	Tu. Th. Sat. 10.45
Oratory 1 . . . . .	Whittemore	Th. 2.00
Physical Training . . . . .	Stroud	

### SOPHOMORE YEAR

SUBJECT	INSTRUCTOR	TIME
Old Testament 3 [Hebrew 1] . .	Woodbridge	Tu. Th. Sat. 11.45
German 3 (or 2) . . . . .	Fay (or Colwell)	Tu. Th. Sat. (or Mon. Wed. Fri.) 8.45
English 5 . . . . .	Shipman	Tu. Th. 3.00 (1)
Philosophy 1 (or 2) and 5 . . . .	Cushman	Tu. Th. Sat. 9.45
English 11 (or 12) . . . . .	Maulsby	Mon. Wed. Fri. 2.00
New Testament 1 [History 12] .	Harmon	Mon. Wed. Fri. 3.00 (1)
History 1 . . . . .	Evans	Mon. Wed. Fri. 10.45
Oratory 2 . . . . .	Whittemore	
Physical Training . . . . .	Stroud	

## JUNIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Biology 1 . . . . .	Kingsley and Lambert	Tu. Th. 11.45, 2.00, 3.00
Philosophy 3 and 4 . . . . .	Shipman	Tu. Th. Sat. 10.45
English 12 (or 11) . . . . .	Maulsby	Mon. Wed. Fri. 2.00
History of Religions 2 [History 14]	Woodbridge and Knight	Tu. Th. Sat. 9.45
History 7 (or 2, or 3) . . . . .	Evans (or Bolles)	Mon. Wed. Fri. 3. (2) (or 8.45 or 10.45 for the year)
Public Law and Administration 1	Evans	Mon. Wed. Fri. 11.45 (1)
Old Testament 2 . . . . .	Woodbridge	Mon. Wed. Fri. 9.45 (1)
New Testament 2 . . . . .	Harmon	Mon. Wed. Fri. 9.45 (2)

## SENIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 1 . . . . .	Metcalf	Tu. Th. Sat. 10.45
Public Law and Administration 4, 5, or 6 . . . . .	Evans	Mon. Wed. Fri. 8.45
Old Testament 5 . . . . .	Woodbridge	Tu. Th. Sat. 8.45
New Testament 3 . . . . .	Harmon	Mon. Wed. Fri. 11.45
Ethics . . . . .	Tousey	Mon. Wed. Fri. 10.45
Systematic Theology 1 . . . . .	Knight	Mon. Wed. Fri. 4.00 (2)
Homiletics 1 [English 27]	Leonard	Tu. Th. Sat. 11.45

## FIFTH YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 2 and 3 . . . . .	Metcalf	Mon. Wed. Fri. 9.45
History of Religions 1 [History 13]	Knight	Tu. Th. Sat. 8.45 (1)
Philosophy of Theism [Philos- ophy 14]	Tousey	Mon. Wed. Fri. 11.45
Systematic Theology 2 [Philosophy 15]	Knight	Tu. Th. Sat. 11.45
Applied Christianity . . . . .	Woodbridge	Mon. Wed. Fri. 4.00
Pastoral Theology . . . . .	Leonard	Tu. Th. Sat. 8.45 (2)
Homiletics 2 . . . . .	Leonard	Tu. Th. Sat. 9.45



## General Information

---

In addition to the information given on pages 169 to 184, the following is of interest to Divinity students.

### RELIGIOUS OBSERVANCES

A religious service is held in the chapel in Miner Hall daily (except Saturdays and Sundays) at 1.45 P.M. Attendance is voluntary.

### SUPPLEMENTARY LECTURES

Lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

### LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Senior Year. Before that time the members of the Divinity School are not allowed to preach.

### BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

### EXPENSES AND PECUNIARY AID

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to Divinity students; certain prizes are also available under conditions, especially as described on pages 181, 182 of this catalogue.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

**THE GREENWOOD SCHOLARSHIP.**—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

**THE DOCKSTADER SCHOLARSHIP.**—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each:—

**THE WHITTEN SCHOLARSHIP.**—Founded by Mrs. Maria F. Whitten, of Cambridge.

**THE HOLT SCHOLARSHIP.**—Founded by Miss Celia Holt, of Stafford, Conn.

**THE HENRY L. BALLOU SCHOLARSHIP.**—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

# THE MEDICAL SCHOOL



## Medical Faculty\*

---

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . . Tufts College

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston  
*DEAN, and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.  
Tufts College Medical School  
*SECRETARY, and Professor of Anatomy*

HENRY WATSON DUDLEY, M.D. . . . . Abington  
*Professor of Pathology, Emeritus, and Lecturer on Legal Medicine*

JOHN LEWIS HILDRETH, A.B., M.D., LL.D.  
*Professor of Clinical Medicine, Emeritus* 14 Garden St., Cambridge

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston  
*Professor of Hygiene*

ERNEST WATSON CUSHING, A.B., M.D., LL.D.  
168 Newbury St., Boston  
*Professor of Abdominal Surgery and Gynaecology*

EDWARD OSGOOD OTIS, A.B., M.D. . . . 381 Beacon St., Boston  
*Professor of Pulmonary Diseases and Climatology*

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree  
*Professor of General Chemistry*

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston  
*Professor of Diseases of the Nervous System*

HENRY BECKLES CHANDLER, C.M., M.D. 34½ Beacon St., Boston  
*Professor of Ophthalmology*

FREDERIC MELANCTHON BRIGGS, A.B., M.D.  
*Professor of Clinical Surgery* 31 Massachusetts Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington  
*Professor of Materia Medica and Therapeutics*

GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Histology*

---

\* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged in groups: Professors, Assistant Professors, Demonstrators, Instructors, and Assistants. Within each group the order is that of academic seniority.



- GEORGE HAMLIN WASHBURN, A.B., M.D.  
*Professor of Obstetrics* 377 Marlborough St., Boston
- ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road, Newton  
*Professor of Medical Chemistry and Toxicology*
- HORACE DAVID ARNOLD, A.B., M.D. . . 427 Beacon St., Boston  
*Professor of Clinical Medicine*
- TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury  
*Professor of Pathology and Bacteriology*
- JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston  
*Professor of Dermatology*
- GEORGE WARTON KANAN, M.D. . . . . 419 Boylston St., Boston  
*Professor of Clinical Gynaecology*
- EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown  
*Professor of Otolaryngology*
- EDWARD BINNEY LANE, M.D. . . . Insane Hospital, Dorchester  
*Professor of Mental Diseases*
- HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury  
*Assistant Professor of Theory and Practice of Medicine*
- HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston  
*Assistant Professor of Clinical Medicine*
- WILLIAM ELISHA CHENERY, A.B., M.D.  
*Assistant Professor of Laryngology* 222 Huntington Ave., Boston
- EDMUND CHANNING STOWELL, A.B., M.D.  
 9 Massachusetts Ave., Boston  
*Assistant Professor of Children's Diseases*
- GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.  
*Assistant Professor of Physiology* 150 St. Botolph St., Boston
- FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston  
*Assistant Professor of Ophthalmology*
- GARDNER WELD ALLEN, A.B., M.D. 419 Boylston St., Boston  
*Assistant Professor of Genito-Urinary Surgery*
- CHARLES FAIRBANK PAINTER, A.B., M.D.  
*Assistant Professor of Orthopedic Surgery* 86 Bay State Road, Boston
- JOHN LINCOLN AMES, M.D. . . . . 72 Chestnut St., Boston  
*Assistant Professor of Clinical Medicine.*
- EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury  
*Demonstrator of Anatomy*

**OTHER INSTRUCTORS**

EDWARD LAMBERT TWOMBLY, A.B., M.D.

*Instructor in Clinical Medicine* 406 Massachusetts Ave., Boston

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston

*Instructor in Otology*

JOHN JENKS THOMAS, A.M., M.D. . . 88 Bay State Road, Boston

*Instructor in Neurology*

KARL AUGUST HOCH, M.D. . . . . McLean Hospital, Waverley

*Instructor in Neuro-Pathology*

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston

*Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases*

THEODORE CHARLES ERB, M.D. . . 159 St. Botolph St., Boston

*Instructor in Obstetrics*

ROBERT WORTHINGTON HASTINGS, A.M., M.D.

The Beaconsfield, Brookline

*Instructor in Theory and Practice of Medicine and Assistant in Pediatrics*

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury

*Instructor in Pathology and Bacteriology*

EDWARD ELIPHALET THORPE, M.D. . 711 Boylston St., Boston

*Instructor in Medical Chemistry*

WARREN FISHER GAY, A.B., M.D. . 416 Marlborough St., Boston

*Instructor in Surgery and Assistant in Anatomy*

FREDERICK WARREN PEARL, A.B., M.D.

Hotel Vendome, Commonwealth Ave., Boston

*Instructor in Operative and Clinical Surgery and Assistant Demonstrator of Anatomy*

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston

*Instructor in Clinical Surgery*

HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury

*Instructor in Obstetrics*

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston

*Instructor in Materia Medica and Therapeutics*

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury

*Instructor in Obstetrics and Assistant in Clinical Medicine*

ELIZABETH ANGELA RILEY, M.D. . . . 483 Beacon St., Boston

*Instructor in Gynaecology and Abdominal Surgery*

- FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston  
*Instructor in Electro-Therapeutics and Haematology*
- JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston  
*Instructor in Obstetrics*
- ELWOOD TRACY EASTON, M.D. . . . 603 Tremont St., Boston  
*Instructor in Ophthalmology*
- HARRY CALDWELL PARKER, M.D. .  
*Instructor in Ophthalmology* 382 Commonwealth Ave., Boston
- FRANK PERCIVAL WILLIAMS, M.D. . Warren Chambers, Boston  
*Instructor in Rectal Diseases*
- HARRY HOMER GERMAIN, M.D. . . . 173 Beacon St., Boston  
*Instructor in Clinical Surgery*
- LUTHER GORDON PAUL, M.D. . . . . 10 Exeter St., Boston  
*Instructor in Clinical Surgery*
- ARTHUR PATTERSON CHADBOURN, A.B., M.D.  
*Assistant in Clinical Medicine* 225 Marlborough St., Boston
- WILLIAM EASTMAN FAY, A.B., M.D.  
*Assistant in Clinical Medicine* 366 Commonwealth Ave., Boston
- CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston  
*Assistant in Clinical Medicine*
- DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston  
*Assistant in Clinical Gynaecology*
- EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston  
*Assistant in Clinical Gynaecology*
- ARTHUR WILLARD FAIRBANKS, M.D.  
*Assistant in Clinical Medicine* 362 Commonwealth Ave., Boston
- ELMON ARTHUR BURNHAM, A.B., M.D.  
*Assistant in Clinical Medicine* 144 Huntington Ave., Boston
- ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester  
*Assistant in Clinical Medicine*
- H. FOWLER RAINSFORD WATTS, M.D.  
*Assistant in Clinical Medicine* 372 Dorchester Ave., Boston
- CHARLES BALFOUR DARLING, A.B., M.D.  
*Assistant in Clinical Gynaecology* 27 Rockville Park, Roxbury
- JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass  
*Assistant in Clinical Medicine*

- WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston  
*Assistant in Clinical Gynaecology*
- RICHARD FROTHINGHAM O'NEIL, A.B., M.D.  
 416 Marlborough St., Boston  
*Demonstrator of Surgical Apparatus and Bandaging*
- ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain
- WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park  
*Assistant in Anatomy*
- THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury  
*Assistant in Clinical Medicine*
- JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Howard St., Brookline  
*Assistant in Clinical Medicine*
- ADELAIDE OLGA CUSHING-LEARY, M.D.  
*Assistant in Pathology and Bacteriology* Cushing Hospital, Roxbury
- T. SCOTT MCLEOD, M.D. . . . . 56 Bartlett St., Roxbury  
*Assistant in Anatomy*
- WILLIS T. MIDDLETON, M.D. . . . . West Quincy  
*Assistant in Anatomy*
- ALONZO KINGMAN PAINE, M.D. . . . . 69 Gainsboro St. Boston  
*Prosector in Anatomy*
- WILLARD CHUTE PETERS, M.D. . . . . Boston City Hospital  
*Assistant in Clinical Surgery*
- FREDERICK WINSLOW STETSON, A.B., M.D.  
*Assistant in Clinical Medicine* Columbia Road, Dorchester
- ARTHUR T. LEGG, M.D. . . . . Charlesgate, Boston  
*Assistant in Orthopedics*

## Laboratory Assistants

*Anatomy*

L. MARY-BELLE HOLT, B.L. . . . .	Portland, Me.
HORACE G. WHEATON . . . . .	Cambridge
CARL R. O'BRIEN . . . . .	Chelsea

*Pathology and Bacteriology*

EDISON W. BROWN . . . . .	Dorchester
JOHN M. KELLEY . . . . .	Dorchester
LEON S. A. MEDALIA . . . . .	Boston

*Histology*

LEO T. MYLES . . . . .	Cambridge
FRANKLIN WELLES . . . . .	Boston
GUY M. WINSLOW . . . . .	Newton

*Physiology*

FREEMAN A. TOWER . . . . .	Sterling Junction
MARGARET E. CARLEY . . . . .	Winthrop
SYDNEY C. HARDWICK . . . . .	Quincy
SOLON W. PETERS . . . . .	Sterling

*Medical Chemistry*

LUTHER G. DEARBORN, JR., A.B. . . . .	Somerville
CLARK K. PETERSON . . . . .	E. Boston
W. DACRE WALKER . . . . .	Peabody
FRANK W. ROGERS . . . . .	Dedham
CHARLES H. YOUNG . . . . .	Woburn

*General Chemistry*

THOMAS W. MURPHY . . . . .	Lawrence
ADELINE F. DUNHAM . . . . .	Boston
CORNELIUS A. SULLIVAN . . . . .	Everett
JOSEPH A. MEEHAN . . . . .	Lowell
CUSHMAN DAY . . . . .	Boston

*Pharmacology*

JOHN J. GIBBONS . . . . .	Clinton
WILLIAM A. DUTCHER . . . . .	Boston

## Bursar

HERBERT T. BROWN . . . . .	Tufts College
----------------------------	---------------

## STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.—The President, the Dean, the Secretary, Drs. Wheatley and Leary.

CATALOGUE.—Drs. Briggs, Bates, and Dearborn.

NOMINATIONS.—Drs. Wheatley and Arnold.

LIBRARY.—Drs. Otis, Howe, and Cushing.

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Briggs, and Washburn.

ADMISSION.—Drs. Leary, Dearborn, and Bates.

DISPENSARY.—Drs. Briggs and Arnold.

# The College Dispensary Staff

---

## DEPARTMENT OF MEDICINE

### Chief-of-Staff

HORACE D. ARNOLD, M.D., *Professor of Clinical Medicine*

### Associate

HOWARD S. DEARING, M.D., *Assistant Professor of Clinical Medicine*

### Physicians

JOSEPH H. SAUNDERS, M.D. ANNIE S. K. PATCH, M.D.

FREDERIC W. STETSON, M.D. ISIDORE E. R. REID, M.D.

HORATIO S. CARD, M.D.

## DEPARTMENT OF SURGERY

### Chief-of-Staff

FREDERIC M. BRIGGS, M.D., *Professor of Clinical Surgery*

### Surgeons

FRANCIS D. DONOGHUE, M.D. WILLIAM G. ADAMS, M.D.

FREDERICK W. PEARL, M.D. HAROLD W. SMITH, M.D.

WILLIAM C. PETERS, M.D.

## DEPARTMENT OF GYNAECOLOGY

### Chief-of-Staff

ERNEST W. CUSHING, M.D., *Professor of Gynaecology*

### Associate

GEORGE W. KAAH, M.D., *Professor of Clinical Gynaecology*

### Gynaecologists

EDWARD L. TWOMBLY, M.D. ELIZABETH A. RILEY, M.D.

CHARLES B. DARLING, M.D.

## DEPARTMENT OF LARYNGOLOGY

### Chief-of-Staff

WILLIAM E. CHENERY, M.D., *Assistant Professor of Laryngology*

### Laryngologists

ALFRED A. AMADON, M.D. FREDERIC D. LYON, M.D.

GEORGE S. McPHERSON, M.D. FRANK E. HASKINS, M.D.

### Pharmacist

ELBERN T. BOWERS, PH.G., M.D.





## Tufts College Medical School

---

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the school to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre and a half of floor space; is heated and ventilated throughout by both the direct and indirect systems, and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

---

### Departments of Instruction

#### ANATOMY

The course in anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their

importance in various operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

### PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student, each week, together with the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the subject matter of Stewart's "Manual of Physiology," and with the Syllabus, is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on important interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the class. In addition a three-hour written examination, covering the entire work of the year, is held at the

completion of the work, besides important subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period it is hoped that at least a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

### GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3, in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the Medical Chemistry of the second year, and in the near future to have it include much of the preliminary work of that course.

### HISTOLOGY

The work in histology covers the first half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course.

### MATERIA MEDICA AND THERAPEUTICS

Instruction in therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutic application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student

with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

### MEDICAL CHEMISTRY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in lectures, quizzes, and practical work in the laboratory. Every week there are three lectures and three quizzes of one hour each, besides sixteen hours required in the laboratory. The students first acquire a familiarity with proteins, carbohydrates, and fats,—the bases of food-stuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, feces, normal and abnormal. In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

### PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions,



during the period covered by the class. This work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in autopsy technique will be given in the amphitheatre of the school.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all of the important subjects of general and special pathology. Special attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark on the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

### BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is

made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

### **THEORY AND PRACTICE OF MEDICINE**

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-class, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

### **SURGERY**

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Sen-

ior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

### OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

### PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the department for Diseases of the Lungs of the Boston Dispensary, formerly President of the American Climatological Association, has been elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the clinic of the Boston Dispensary for diseases of the lungs will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given

to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

### GYNAECOLOGY

Instruction in gynaecology is given both by lectures and clinical teaching. Lectures are given to the third year students twice a week during the second term. Once a week a quiz is held on the lectures.

### DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great; examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

### HYGIENE

Freshmen are taught elementary hygiene, and the benefits derived from wholesome associations, during the first half of the year.

The third year, the course in hygiene includes public sanitation. Water supplies, sewerage systems, house and school construction, municipal sanitation, industrial occupations, preventable diseases, vital statistics, and sanitary codes are among the subjects of the lectures. During the second half of the year, Professor Austin, in connection with the work in hygiene, will instruct the class in the chemical analysis of air, water, and foods, chiefly by means of demonstration.

One of the objects of this study is to supply qualified candidates for Public Health Offices.

### CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease.

Normal auscultation and percussion will be taught in the latter part of the second year. During the third year the work in auscultation and percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture twice a week in medical diagnosis. A course in hæmatology, including lectures and practical work, will be given by Dr. Strong.

During the fourth-year there will be four regular exercises weekly, besides numerous clinics. Two clinical lectures are given weekly in the amphitheatre of the Boston City Hospital, one by Professor Arnold and one by Assistant Professor Ames. Patients from the hospital wards will be shown, and the diagnosis and treatment of these cases will be discussed. Third-year students will be admitted to this exercise.

The third weekly exercise will be held at the school by Professor Arnold. These exercises will consist partly of didactic lectures supplementing the clinical lectures at the hospital, and partly of the discussion of clinical cases, in which both instructor and students take part. A number of these lectures will be devoted to the consideration of life insurance and other aspects of what may be termed mercantile medicine. Assistant Professor Dearing will also lecture on Military Medicine, as part of this course.

The fourth exercise will be a clinical conference, one hour a week, under the charge of Assistant Professor Ames. At this conference reports of cases written by the fourth-year students will be read, discussed, and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students



will also be admitted to the clinical conferences. As part of this course Dr. Chase will give a series of lectures on Diseases of the Stomach.

Clinical exercises are held at the following institutions: Boston City Hospital, Carney Hospital, St. Elizabeth's Hospital, Boston Dispensary, and the Tufts College Medical School Dispensary. The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Another important feature of the instruction consists of visits made by the students with the district physicians of the Boston Dispensary. Here the students see cases of sickness in the home. They are not only instructed in the care of patients under these conditions, but have opportunities for following cases through every aspect of the disease. They will be required to make a special study of certain of these cases, and their written reports furnish much of the material for the clinical conferences.

Examinations are held as follows:—on normal auscultation and percussion at the end of the second year; two one-hour examinations in the third year, one on pulmonary diseases and one on medical diagnosis (including haematology); and a final three-hour examination at the end of the fourth year. The marks in clinical medicine will be based on the practical work throughout the course and on the reports of cases, as well as on the written examinations.

### CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continu-



ing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston Dispensary, at the Carney Hospital, at St. Elizabeth's Hospital, and at the School Dispensary, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have numerous opportunities of administering ether, of assisting at operations, and, with certain limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

### CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the

clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

### NEUROLOGY

The department of neurology has been entirely reorganized under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented by lectures by Dr. Hoch, on the anatomy, physiology, and pathology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

### MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston Insane Hospital, where a large number of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverly. It will be the aim of this course to allow the students to become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, with the methods of commitment. Especial attention will be given mental defects in children.

Students are urged to prepare themselves for this course by taking the optional course offered in normal medical psychology.

### LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the school during the first half year. These lectures are illustrated by colored diagrams, models, pathological specimens, and the exhibition of instruments.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class in the clinic of the School Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is given to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases that the family physician is expected to care for. Opportunity is given also to see the more important operations of the nose and throat. Practical lectures will be given at the school. The class will visit, in sections, the clinics of the School Dispensary, and also the Boston Dispensary.

### OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, the Carney Hospital, and the School Dispensary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

### ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year stu-

dents during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

### LEGAL MEDICINE

The instruction in legal medicine consists of one lecture each week for twelve weeks, and will include all the subjects which are usually embraced under the head of medical jurisprudence. Instruction will be given in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

### ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital (the class being divided into two sections), during the second half-year. One of the clinics of the first half-year is in special orthopedic pathology. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward-visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

### MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. Instruction is given in the methods of physical examination, the preparation of certificates, and other allied subjects. The instruction is given by Professor Arnold and Assistant Professor Dearing, in connection with the department of clinical medicine.

### OTOLOGY

The instruction in otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary, and, if desirable, at Carney Hospital. An elective course consists of clinical work at the same institutions.

### DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of twelve weekly lectures during the first half-year, at the school, and clinical instruction three mornings of the week, at the Boston Dispensary. Each student will have ample opportunity to examine and in suitable cases, to apply, treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases. Instruction will be given by Dr. Frank P. Williams.

### DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to March. Besides, from January to June, there will be three clinics weekly at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

### GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable.

### ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations. A sharp distinction will be drawn between effects attributable to suggestion and those really due to electrical action. A clinic has been established where the student may observe the technique of the X-ray, the ultra-violet ray, and the high-frequency currents. Several evening lectures of a popular and experimental nature will be given on "The Phenomena of the Electrical Discharge, and its relation to the X-Ray and Radio-Activity." These lectures, while given primarily for the class in electro-therapeutics, will be open to anyone interested in the subject.



## NORMAL MEDICAL PSYCHOLOGY

A course of lectures in normal medical psychology is given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations the principles of normal mental action, and to describe the mind as one of the two aspects or parts of every individual. Besides its own important value as science, (and one whose applications are seen in every hour of life), psychology is the indispensable basis of an understanding of the complex diseases of the mind and of the nervous system, just as physiology underlies practical medicine.

In addition to this, however, the course will discuss certain special topics of great practical importance to the medical practitioner: such topics for example as suggestibility, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. The course is given by Assistant Professor Dearborn.

---

## Requirements

### FOR ADMISSION TO FIRST-YEAR CLASS

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies:—

(a) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1903 and 1904 will be chosen from the following:—

(1) Shakespeare's *Merchant of Venice*; (2) Thackeray's *Henry Esmond*; (3) Burke's *Speech on Conciliation with America*; (4) Scott's *Ivanhoe*.



Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Beginning with the session of 1905-1906, a knowledge of chemistry will be required for entrance.

Students applying for admission to this school are advised to prepare themselves in Elementary French and German, although at the present time no entrance examination in these branches is required.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to commence his second year whose entrance conditions are not removed.

EXCEPTIONS.—Graduates of approved high and preparatory schools will be admitted on presentation of approved entrance certificates; also students holding certificates of entrance to a college or university, those holding the State of New York Regents' certificate, and graduates of a college or university will be admitted without entrance examination. Students who intend entering the school on credentials must bring them. A certificate of graduation attested by a town clerk will be accepted in lieu of a diploma.

Entrance examinations will be held on Monday, June 13, 1904, and on Saturday, Oct. 1, 1904, at 10 A.M.

Candidates who intend taking these examinations are re-

quired to notify the Secretary one week before date of examinations.

### **Advanced Standing**

Students of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in anatomy, physiology, general chemistry, and histology, may be admitted to the second-year class.

No credit will be given for examinations passed at other schools.

Students from other schools who are candidates for advanced standing must present themselves for examination on Monday, Sept. 26, 1904.

### **Promotion**

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

### **The Third-Year Class**

Students who have passed all the first-year examinations, and a majority of the second-year examinations, may be admitted to the third-year class.

### **The Fourth-Year Class**

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

## **GRADUATION**

### **For the Degree of M.D.**

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:

1. They must furnish certificates that they are twenty-one years of age and of good moral character.

2. They must have attended four full courses of medical lectures at some accredited medical college, the last of which shall have been at this school, and no two courses in the same twelve months.

3. They must have passed all the required examinations.

4. They must have attended two cases of obstetrics.

5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.

6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

### HONORS

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

### OUTLINE OF THE COURSE

#### First Year

**Descriptive Anatomy.**—Lectures, demonstrations, recitations, and dissecting. *Sixteen hours a week during the first semester.*

**General Chemistry.**—Lectures, and required laboratory work. *Thirteen hours a week during the second semester.*

**Physiology.**—Lectures, demonstrations, conferences, recitations, and experimental work in the laboratory. *Twelve hours a week during the second semester.*

**Histology.**—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the first semester.*

**Hygiene.**—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

### Second Year

**Materia Medica and Therapeutics.**—Lectures and recitations. *Four hours a week during the first semester.*

**Medical Chemistry and Toxicology.**—Lectures and required laboratory work. *Twelve hours a week during the first semester.*

**Pathology.**—Lectures, demonstrations, and required laboratory work. *Twelve hours a week during the second semester.*

**Bacteriology.**—Lectures and required laboratory work. *Five hours a week during the second semester.*

**Normal Auscultation and Percussion.**—Lectures and exercises during second semester.

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

**Bandaging and Apparatus.**

### Third Year

**Theory and Practice of Medicine.**—Lectures, and recitations. *Four hours a week.*

**Surgery.**—Lectures and recitations. *Three hours a week.*

**Obstetrics,** including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

**Ophthalmology.**—*Two hours a week.*

**Gynaecology.**—Lectures and recitations. *Three hours a week.*

**Laryngology.**—*Two hours a week.*

**Pediatrics.**—*Six hours a week.*

**Hygiene.**—*One hour a week.*

**Medical Diagnosis.**—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

### Fourth Year

**Clinical Medicine, Clinical Surgery, Abdominal Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.**

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added **Ophthalmology** and **Laryngology**. Electro-Therapeutics and Legal Medicine cannot be taken as electives.

There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

### EXAMINATIONS

There are two periods of examination each year in the college building. They are in writing, and are held during the week preceding the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of medicine.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 1, 1904. Students intending to take any of the spring examinations must register their names with the Secretary, on or before May 1, 1904.

Students who have failed twice in their examination upon any subject will not be admitted to a third examination without the payment of an extra examination-fee of five dollars.

### TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

**Anatomy.**—Gray, Quain, Morris, Holden, Haynes' Dissector.

**Physiology.**—Syllabus (for laboratory directions), Stewart's Manual, American Text-book, Foster, Kirke, Verworn, Schäfer, Porter.

**General Chemistry.**—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

**Histology.**—Syllabus, Böhm and Davidoff, Stohr.

**Medical Chemistry.**—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

**Collateral Reading.**—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

**Materia Medica and Therapeutics.**—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

**Pathology.**—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.



**Bacteriology.**—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

**Obstetrics.**—Hirst, Reynolds, Jewett, American Text-book.

**Gynaecology.**—Greig-Smith, Byford, Dudley, Kelly, Reed.

**Clinical Gynaecology.**—Davenport, Dudley, Greig-Smith.

**Surgery.**—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

**Clinical and Operative Surgery.**—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Bryant's Operative Surgery, Zuckerkandl's Operative Surgery, Da Costa.

**Practice of Medicine.**—Osler, Tyson, Thompson, Strümpell, Eichhorst-Ander's Practice of Medicine.

**Dermatology.**—Diseases of the Skin by Hyde and Montgomery, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

**Hygiene.**—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

**Clinical Medicine.**—Osler's Practice of Medicine, Wood and Fitz's Practice, Musser's Medical Diagnosis, Tyson's Physical Diagnosis.

**Neurology.**—Church and Peterson, Oppenheim, Gower, Dana.

**Mental Diseases.**—Chapin, Clouston, Peterson, Lewis, Dictionary of Psychological Medicine.

**Pediatrics.**—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

**Laryngology.**—Shurley, Coakley, Kyle, Knight.

**Diseases of the Rectum.**—Kelsey's last edition; Ball, last edition; Tuttle, Gant, second edition.

**Orthopedics.**—Bradford and Lovett, last edition.

**Otology.**—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

**Ophthalmology.**—De Schweinitz, Nettleship, Noyes.

**Medical Dictionary.**—Gould, Dunglison.



## **General Information**

---

### **CLINICAL ADVANTAGES**

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Boston Dispensary, the Carney Hospital, the Tremont Dispensary, the Cambridge Hospital, the Free Home for Consumptives, the Free Hospital for Women, the Women's Charity Hospital, St. Mary's, the Good Samaritan, and the Dispensary of the Medical School, in which over eight thousand visits were made in the year 1903-1904.

### **LIBRARIES**

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than fifteen thousand books upon medical subjects.

### **SESSIONS OF THE SCHOOL**

The annual course of lectures begins on the first Tuesday in October of each year, and continues until the last Wednesday in May.

The annual course of lectures for 1904-1905 will commence Tuesday, October 4, 1904.

### **VACATIONS**

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

## Summer Courses

The following laboratory subjects are offered during the summer months:—

### PHYSIOLOGY

A course in Physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and recitations adequate to the outlines and basal principles of physiology. The fee for this class will be twenty dollars.

### MEDICAL CHEMISTRY

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advanced work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

### HISTOLOGY

A summer course in Histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

### EXPENSES

#### First Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00
Dissecting . . . . .	At cost

#### Second Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00
Dissecting . . . . .	At cost.

#### Third Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

## Fourth Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	90.00
Graduation fee . . . . .	30.00
<hr/>	
Postgraduate fee for graduates of other schools . .	120.00
Single course . . . . .	30.00
Postgraduate fee for graduates of this school . . .	60.00
Single course . . . . .	20.00

All fees are due and must be paid before November 1st. Fees are not returnable.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees and charges of every kind are settled.

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city not approved by the Faculty.

**STANDING AND CERTIFICATES**

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the school.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled. *All students must fill out and deposit a registration blank before October 15.*

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Medical School, Boston, Mass.



# THE DENTAL SCHOOL





## Faculty of the Dental School\*

---

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . 8 Professors Row  
*PERSIDENT, and Professor of Moral Philosophy and Political Economy*

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston  
*DEAN, and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.  
Tufts College Medical School  
*SECRETARY, and Professor of General, Descriptive, and Applied  
 Anatomy*

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston  
*Professor of Hygiene*

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree  
*Professor of General Chemistry*

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.  
235 Marlborough St., Boston  
*Professor of the Theory and Practice of Dentistry*

EDWARD WALTER BRANIGAN, D.D.S.  
*Professor of Clinical Dentistry* 2 Commonwealth Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington  
*Professor of Materia Medica and Therapeutics*

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park  
*Professor of Prosthodontia*

GEORGE ANDREW BATES, D.D.S. . . . . Auburndale  
*Professor of Histology*

FREDERICK MELANCTHON BRIGGS, A.B., M.D.  
*Professor of Oral Surgery* 31 Massachusetts Ave., Boston

FREDERICK MORTIMER HEMENWAY, D.D.S.  
*Professor of Prosthetic Dentistry* 88 Boylston St., Boston

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury  
*Professor of Pathology and Bacteriology*

---

\* With the exception of the President, the Dean, and the Secretary, the members of the Faculty are arranged in groups; Professors, Assistant Professors, Demonstrators, Instructors, and Assistants. Within each group, the order is that of academic seniority.

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.

*Assistant Professor of Physiology*

150 St. Botolph St., Boston

BYRON HOWARD STROUT, D.D.S. . . . . Taunton

*Assistant Professor of Operative Technics and Instructor in Anaesthesia*

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury

*Demonstrator of Anatomy*

### OTHER INSTRUCTORS

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge

*Instructor in Clinical Dentistry*

GEORGE LYLE MARSHALL, D.D.S. . . . 5 Bow St., Somerville

*Instructor in Prosthetic Dentistry*

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston

*Instructor in Prosthetic Dentistry*

WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston

*Instructor in Clinical Dentistry*

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston

*Instructor in Clinical Dentistry*

HENRY HILDRETH PIPER, D.D.S. . . . Winter Hill, Somerville

*Instructor in Clinical Dentistry*

JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston

*Instructor in Clinical Dentistry*

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury

*Instructor in Pathology and Bacteriology*

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham

*Instructor in Clinical Dentistry*

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston

*Instructor in Materia Medica and Therapeutics*

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston

*Instructor in Clinical Dentistry*

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park

*Instructor in Clinical Dentistry*

WALTER FORSYTHE WINCHESTER, D.D.S.

*Instructor in Prosthetic Dentistry*

372 Bolyston St., Boston

WILLIAM M. FLYNN, D.D.S. . . . . 474A Broadway, So. Boston

*Instructor in Clinical Dentistry*

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham  
*Lecturer on Operative Dentistry*

KNUT JOSEPH LUTTROP, D.D.S. . . . 419 Boylston St., Boston  
*Demonstrator in Operative Dentistry*

ISIDORE EUGENE ROSENSTEIN REID, M.D., C.M.  
*Assistant Demonstrator of Anatomy* 84 Boylston St., Jamaica Plain

FREDERICK WARREN PEARL, A.B., M.D.  
 Hotel Vendome, Commonwealth Ave., Boston  
*Assistant Demonstrator of Anatomy*

ADELAIDE OLGA CUSHING-LEARY, M.D.  
*Assistant in Pathology and Bacteriology* Cushing Hospital, Roxbury

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park  
*Assistant in Anatomy*

WILLIS T. MIDDLETON, M.D. . . . . W. Quincy  
*Assistant in Anatomy*

ALONZO KINGMAN PAINE, M.D. . . . . St. Elizabeth's Hospital  
*Prosecutor in Anatomy*

## LABORATORY ASSISTANTS

### *Anatomy*

L. MARY-BELLE HOLT, B.L. . . . . Portland, Me.  
 HORACE G. WHEATON . . . . . Cambridge  
 CARL R. O'BRIEN . . . . . Chelsea

### *Physiology*

FREEMAN A. TOWER . . . . . Sterling Junction  
 MARGARET E. CARLEY . . . . . Winthrop  
 SYDNEY C. HARDWICK . . . . . Quincy  
 SOLON W. PETERS . . . . . Sterling

### *General Chemistry*

THOMAS W. MURPHY . . . . . Lawrence  
 ADELINE F. DUNHAM . . . . . Boston  
 CORNELIUS A. SULLIVAN . . . . . Everett  
 JOSEPH A. MEEHAN . . . . . Lowell  
 CUSHMAN DAY . . . . . Boston

### *Histology*

LEO T. MYLES . . . . . Cambridge  
 FRANKLIN WELLES . . . . . Boston  
 GUY M. WINSLOW . . . . . Newton

*Pathology and Bacteriology*

EDISON W. BROWN . . . . .	Dorchester
JOHN M. KELLEY . . . . .	Dorchester
LEON S. MEDALIA . . . . .	Boston

*Pharmacology*

JOHN J. GIBBONS, JR. . . . .	Clinton
WILLIAM A. DUTCHER . . . . .	Boston

**OTHER OFFICERS**

HERBERT T. BROWN . . . . .	Tufts College
----------------------------	---------------

*Bursar*

MARY WRIGHT RICHARDSON

*Clerk in Infirmary*

SARAH ELIZABETH MILLER

*Clerk in the Prosthetic Department*

FRANCES WILDER

*Matron in the Operating-Room***STANDING COMMITTEES OF THE DENTAL SCHOOL**

ADMINISTRATION.—The President, Drs. Branigan and Bates.

ADMISSION.—Drs. Leary, Bates and Dearborn.

NOMINATIONS.—Drs. Hopkins and Barnes.

LIBRARY.—Drs. Knight and Bates.

INSTRUCTION.—Drs. Knight, Hopkins, Hemenway, and Bates.

CATALOGUE.—Drs. Bates and Dearborn.

The Dean and the Secretary are members of all the above committees, *ex officio*.

## Tufts College Dental School

---

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces four academic years of eight months each. The studies of the first year, and a portion of those of the second year, are identical with those of the Medical School. Instruction is given by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, *materia medica*, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory



specimens of the different forms of mechanical work made by himself in the laboratory of the school, and under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has always been to give its students such a training as will not only insure to them the knowledge necessary to equip them for the practical part of the dentist's work, but also inspire in them a respect for the dignity of the profession which they seek to enter.

It is believed that the dentist is not over-educated who is possessed of a working knowledge of the fundamental elements of the science of medicine. Such knowledge can but inspire him with more profound respect for his own branch of study, which stands so closely related to the mother science. But, while the School seeks to keep constantly before the student the need for a proper appreciation of the character and standing of his professional relations, no pains are spared to give abundant instruction in all the elements which pertain to the subject that are needed to graduate well-trained, practical dentists.

Attention is therefore called to the fact that the student, during three entire years of his course, is under the supervision of a professor and his demonstrators, who are in daily attendance at the infirmary.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all con-

nected with the school are urged to avail themselves of the facilities thus offered.

### THE NEW BUILDING

Owing to the rapid growth of the Medical and Dental departments of the College, it was found necessary to provide increased laboratory facilities. Accordingly, in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. The new building is now completed and occupied. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It was designed by Mr. J. Philip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among the best equipped and the most complete dental infirmaries in this country. The prosthetic department which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The building may be reached by any Huntington avenue car with the exception of those of the Cross Town and Cambridge Lines.

## Course of Instruction

---

### ANATOMY

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in anatomy will consist of lectures, recitations, and practical work in the dissecting room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

### CHEMISTRY

The work in chemistry is divided into two parts. During the second half of the first year it is the same as is given to the students of the Medical School. There are five lectures and two recitations each week, with six hours or more of work in the laboratory, including descriptive chemistry, qualitative analysis, and so much of theoretical chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference is made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. This part of the work will be much extended in the near future, the high importance of chemistry to the dental profession being fully recognized.

### PHYSIOLOGY

The course in Physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period, the modern "concentration method" of instruction being in practice in this school. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of Stewart's "Manual of Physiology" and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the department. In addition, a three-hour written examination, covering the entire work of the year, is held at the completion of the work, besides important, subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

### HISTOLOGY

The subject of histology covers the first half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the work covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. Particular attention will be given, in this department, to the study of the minute anatomy of the tooth. The development of the teeth will receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

### ELEMENTARY HYGIENE

The chief object of instruction in hygiene at the commencement of professional study, is to promote a healthy moral, mental, and physical development. The student is informed of the penalties attendant on deviations from the path of rectitude. In the absence of the restraining influences of home, pure associates and wholesome surroundings are esteemed of paramount importance. The student is early taught how diseases are acquired through disregard of moral and physical laws, and how they are transmitted from one person to another. He is taught why a sound body is a barrier to many diseases, and that pure air, and water, wholesome food, proper clothing, and cleanly habits are essential for the best physical and mental growth.

The code of ethics taught in this department is designed to stimulate every student in the aspiration to obtain an honorable name in the profession.

### OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under



which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the minds of the students. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

### OPERATIVE TECHNICS\*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical example, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

### CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry

---

\*NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.



is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

### PROSTHODONTIA

The course of instruction in prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course to the second-year class in making and tempering instruments. Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work and the application of continuous gum to platina; to the manufacture of porcelain teeth in single and block forms; and to crown and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

### ORTHODONTIA

The most important part of the course in orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

### MATERIA MEDICA AND THERAPEUTICS

Instruction concerning *materia medica* and therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class, in sections, is taught by practice. Prescription writing, and the metric system, will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

### **PATHOLOGY AND BACTERIOLOGY**

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given special attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures, and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the school occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

### **THEORY AND PRACTICE OF DENTISTRY**

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course

will be arranged to harmonize with and to supplement the work of the clinical department.

### THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and board of instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsillitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

### SURGERY

The course in Surgery will consist of a systematic series of lectures covering its principles. These lectures will explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. They will not be limited to surgery of the mouth, although especial attention will be given to this portion of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Antisepsis and anaesthesia will be minutely discussed, and practically demonstrated in the Infirmary, in conjunction with the Professor in Operative Technics and Anaesthesia. The student will be carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week will be devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases will be presented exemplifying the choice of an anaesthetic in the particular case. The danger signals

of anaesthesia will be considered, and the proper treatment explained. Local anaesthesia will receive careful attention, and its limitations pointed out.

The technic of aseptic and antiseptic methods in dental work will be thoroughly explained, and shown in connection with the demonstrations of anaesthetics.

### **ANAESTHESIA AND EXTRACTION**

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth, and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

### **CLINICAL CONFERENCE**

Each clinical conference consists in the reading of an essay upon some practical subject—the written report of an actual case by a student of the Senior class, at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

---

## **Requirements**

### **FOR ADMISSION**

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1903-1904 will be

chosen from the following:—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America, (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries; also the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions: Graduates of high and preparatory schools will be admitted on presentation of approved entrance certificates. Also, students holding certificates of entrance to a college or university, those holding the Regents' certificate of the State of New York, and graduates of a college or university will be admitted without examination. The institutions, however, issuing certificates must be accredited as standard by the community within which they are located.

#### FOR ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.



### FOR PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class; but no student will be promoted to the fourth-year class who has not passed all the first and second-year examinations, and a majority of those of the third year.

The Faculty reserve the right to change these requirements from time to time without further notice.

### FOR GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following requirements:—

1. They must present a certificate that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of lectures in some accredited Dental School, the last of which shall have been at this School, and no two courses in the same twelve months.
3. They must have passed all the examinations required, and have satisfied the professors of Operative and Prosthetic Dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course under the supervision of the Prosthetic department.
4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.
5. They must have paid all fees before the final examinations.

### EXAMINATIONS

There are two periods of examination held each year in the School building. Examinations are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.



The fall examinations are for

- (a) Students commencing the study of dentistry.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examinations will be held at 10 A.M. on Monday, June 13, 1904, and on Saturday, Oct. 1, 1904.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in their examinations upon a subject will not be admitted to a third examination without the payment of an extra fee of five dollars.

The examinations are as follows :

**First Year.** *Finals* in Anatomy, Physiology, General Chemistry, Histology, and Elementary Hygiene.

**Second Year.** *Finals* in Operative Technics, Materia Medica, and Therapeutics, Dental Chemistry, and Dental Histology.

*Progress* in Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

**Third Year.** *Finals* in Surgery, Hygiene, Pathology, and Bacteriology.

*Progress* in Orthodontia, Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

**Fourth Year.** *Finals* in Theory and Practice of Medicine, Theory and Practice of Dentistry, Orthodontia, Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

### TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

**Anatomy.**—Gray, Cryer's Internal Anatomy of the Face, Weisse, Quain, Morris, Black's Dental Anatomy.

**Physiology.**—Syllabus as guide to experiments, Stewart's Text Book, Schäfer, Foster, Kirke, Porter, Verworn.

**Chemistry.**—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

**Dental Histology and Microscopy.**—Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition).

**Pathology.**—Syllabus, Miller's Micro-Organisms of the Human Mouth. Burchard's Dental Pathology.

**Hygiene.**—Egbert's Hygiene and Sanitation.

**Materia Medica and Therapeutics.**—Hare, Wood, Cushny, U. S. Dispensatory, Gerrish's Prescription Writing.

**Practice of Surgery.**—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

**Dental Science and Operative Dentistry.**—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

**Prosthetic Dentistry.**—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

**Bacteriology.**—Abbott, Woodhead, Sternberg.

**Medical Dictionary.**—Dunglison.

## EXPENSES

## First Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

## Second Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

## Third Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	120.00

## Fourth Year

Matriculation . . . . .	\$ 5.00
Tuition . . . . .	90.00
Graduation Fee . . . . .	30.00

---

Postgraduate fee for graduates of other schools . .	120.00
Single course . . . . .	30.00
Postgraduate fee for graduates of this school . .	60.00
Single course . . . . .	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the purpose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

---

## General Information

This School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

*All students must be registered and in attendance within ten days after the commencement of lectures.*

### SESSIONS

The annual course of lectures begins on the first Tuesday in October of each year, and continues until the last Wednesday in May. The session of 1904-1905 will commence Tuesday, October 4, at 3 P.M.

### VACATIONS

There are no exercises at the School during three days at Thanksgiving, and the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

### APPLICATIONS

Students intending joining the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him.

### REGISTRATION

The registration is required of all students, yearly. Properly filled registration blanks for the year of 1904-1905 must be deposited with the Secretary on or before October 14.

### ENTRANCE EXAMINATIONS

For the session of 1904-1905 the entrance examinations will be held at the School on Monday, June 13th, 1904, and Saturday, October 1, 1904. Students conditioned in entrance requirements must remove their conditions upon those dates.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.



THE  
BROMFIELD-PEARSON  
SCHOOL



# The Bromfield-Pearson School

---

## BOARD OF INSTRUCTION

ELMER H. CAPEN, D.D., PRESIDENT

GARDNER C. ANTHONY, A.M., DEAN

*Professor of Technical Drawing*

SAMUEL C. EARLE, A.M.

*Assistant Professor of English*

GEORGE FRANCIS ASHLEY

*Instructor in Drawing*

PHILIP M. HAYDEN, A.B.

*Instructor in French*

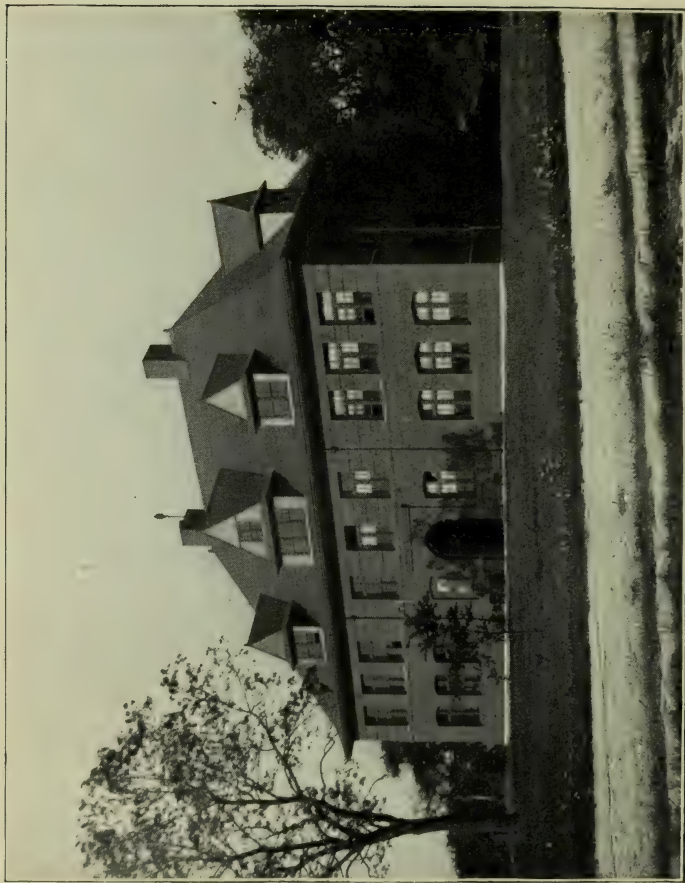
CHARLES E. STEWART, S.B.

*Instructor in Shopwork*

---

*Assistant in Mathematics*

THE  
JOHN CRERAR  
LIBRARY.



THE BROMFIELD-PEARSON SCHOOL

## The Bromfield-Pearson School

---

The Bromfield-Pearson School is designed to meet the wants of young men whose preparation for engineering studies may be deficient in some of the required branches, but whose practice and experience in the applied part of engineering may qualify them to pursue some of the regular subjects while making up their deficiencies.

Thus a student may review all of academic algebra, or geometry, in one year, while pursuing college work in the subjects for which he may be prepared. Elementary instruction in French and English is given in the same manner, an arrangement which enables young men of mature mind and industrious habits to do the work required in a fitting school while anticipating much of the college course. Students who have already acquired a trade will save many hours required for work in the college course, and in most cases will profit much from their experience, in the keener appreciation of engineering studies. The Bromfield-Pearson School is not intended for those who should attend the regular high school or manual training course, but is designed to make the college course possible to many who have been deprived of these opportunities and cannot afford the time ordinarily required in a fitting school.

A two-years' course of study is provided. The first year may be taken as preparatory, either to the Engineering Department of the College, or to the technical course of the School. The course for the second year is arranged to meet the wants of those who are unable to continue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes elementary mathematics, mechanics, and technical drafting.

The Bromfield-Pearson Building is a three-story building,

one hundred by fifty feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the school, and the department of drawing and shop work in the College. One room is set apart as a study for such of the students as do not room at the College. For a fuller description of the building see page 167.

## Course of Study

### FIRST YEAR

#### Preparatory Course

**Algebra** (Academic) will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

**Geometry.** The work comprises plane geometry and all of solid geometry, including spherical.

**Plane Trigonometry** may be taken during the fourth quarter.

**English Grammar and Composition** is pursued throughout the year.

**French** for the entire year is required of those who are preparing for a college course.

**Drawing** (Freehand) comprises the work required for entrance to the College, together with a course in Technical Sketching.

**Drawing** (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the work in Freehand Drawing are identical with the college work in the same subjects, and all, or a part of these, may be omitted by students fitting for college.

**Descriptive Geometry** may be taken by such students as are sufficiently prepared to enter the college class. This subject is pursued during the second term, and is required of those taking the two-years' course.

#### Electives

Those who are sufficiently prepared in any of the studies named above may elect more advanced subjects, as follows:—

Preparation in elementary algebra, as indicated above, will admit to the course in COLLEGE ALGEBRA.

Preparation in elementary algebra, together with plane and solid geometry, will admit to FRESHMAN MATHEMATICS.

As the instruction in DRAWING is largely individual, the student may take the grade for which he is prepared.

SHOPWORK may be taken at any time when it will not interfere with required work.

PHYSICS. (See page 82.)

## SECOND YEAR

### Special Engineering Course

The Second Year is intended only for those who do not enter the Engineering Department of the College. Students will be admitted to college classes for which they may be fitted.

**Advanced Algebra and Trigonometry** are pursued with the college classes during the first term.

**Analytical Geometry** is taken during the second term.

**Calculus.** A special course is given during the second term. This subject is elementary, and is designed to give the student such a knowledge of the practical use of the Calculus as shall enable him to read, in an intelligent manner, books involving its use.

**Mechanics** involves the use of an elementary treatise, including the subject of Graphic Statics.

**Machine Drawing.** The work in Machine Drawing is conducted as in a well-organized drafting-room. It consists largely of freehand sketches and plainly finished drawings, made according to approved systems.

**Mechanism.** Under the head of Mechanism, cams, gearing, links, and other mechanical motions are treated, and much stress is laid on the practical application of principles.

**Machine Design** is begun as soon as the student has become proficient in the preceding subjects, and has acquired neatness, accuracy, and rapidity of execution.

**Steam Engine.** A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of VALVE GEARS is considered at this time. The student is also taught to apply the INDICATOR, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

**Moulding.** A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns.



## ELECTIVES

The following subjects may be pursued in connection with the foregoing, when time and previous preparation will permit:—

**Pattern Making.** The work in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding.

**Forging.** In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, upsetting, welding, tempering, and case-hardening.

**Machine Work.** Vise work in iron includes surface chipping, squaring and fitting, key-seating, scraping, and polishing. The machine practice consists not only in turning, planing, drilling, boring, and milling operations, but in the careful study of the machines, their efficiency, and capabilities.

**Physics.** (See page 82).

**Chemistry.** Instruction in Chemistry is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, cover the ground of theoretical and descriptive inorganic chemistry. Students are charged for breakage, and four dollars a term for materials used.

---

## General Information

### REQUIREMENTS FOR ADMISSION

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they may elect. This may be done by certificate from a school previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

## REGULATIONS OF THE SCHOOL

Students are subject to the rules governing students of the College.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon. Any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular College courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Certificates of proficiency are given the special Engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given, or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before the 15th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons or in private families at \$3.50 to \$5.00. Furnished rooms may be had at \$1.50 or \$2.00 a week. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition . . . . .	\$120.00	\$120.00
Half-room rent . . . . .	15.00	75.00
Board, \$3.50 to \$5.00 a week (36 weeks) . .	126.00	180.00
Physical training . . . . .		10.00
Books, instruments, and supplies . . . . .	15.00	25.00
		<hr/>
Total . . . . .	\$276.00	\$410.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.



# THE SUMMER SCHOOLS

# The Summer Schools

---

## THE SUMMER SCHOOL AT TUFTS COLLEGE

### Instructors

FRANK G. WREN, A.M.

*Professor of Mathematics*

DAVID L. MAULSBY, A.M.

*Professor of English Literature and Oratory*

THOMAS WHITTEMORE, A.B.

*Assistant Professor of English*

## THE HARPSWELL LABORATORY

### Instructors

J. STERLING KINGSLEY, S.D.

*Director, and Professor of Biology*

FRED D. LAMBERT, PH.D.

*Assistant, and Instructor in Natural History*

# The Summer Schools

---

## THE SUMMER SCHOOL AT TUFTS COLLEGE

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In the summer of 1900, classes in Mathematics and English were added. History was taught in 1902.

In 1903, instruction was given in English poetry of the Victorian period, and in English prose of the nineteenth century. In mathematics, the work included trigonometry, analytic geometry, and the theory of least squares.

When satisfactorily completed, the work done in the Summer School can be counted toward a degree.

Board and furnished rooms may be obtained for six dollars a week, or board alone for three dollars and a half a week.

The tuition ordinarily is twenty dollars for each subject pursued. For a list of students in the Summer School at the College in the summer of 1903, see the Register of Students.

All inquiries concerning the Summer School should be addressed to Professor H. G. CHASE, SECRETARY, Tufts College, Mass.

## THE HARPSWELL LABORATORY

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1904 from June 20 until the middle of September. Instruction will be given in zoology,



botany, and beginning research. Instruction will commence July 5, and will continue six weeks. For each subject a fee of twenty-five dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms for research students, the fee for these being fifteen dollars for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses where board and rooms may be had, at five dollars a week and upward.

A list of the students at the Harpswell Laboratory during the summer of 1903 follows the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

# REGISTER OF STUDENTS

Graduate Department

## Fellows

MARION, GUY ELWOOD                      Woburn                      ATQ House  
A.B., 1903    Miner Fellow in Natural History    First Year    Biology

THYNG, FRED WILBUR                      *Ross Corner, Me.*                      East Hall, 10  
*A.B., Colby, 1902 A.M., Tufts, 1903 Olmstead Fellow in Natural*  
*History Second Year Biology.*

## Resident Students

BLAISDELL, ALBERT CHESTER *North Woburn*  
A.B., 1901 *First Year Mathematics*

HAPGOOD, ERNEST GRANGER *Boston* 415 Newbury St.  
A.B., 1901 *Second Year Economics*

HUNTING, ETHEL PARKER *Somerville* 31 *Dartmouth St.*  
A.B., 1900 *First Year English*

MURPHY, ARTHUR, JR. *Wollaston* Dean Hall, 8  
A.B., 1903 *First Year Chemistry*

## Undergraduate Student

(doing advanced work as candidate for a higher degree)

RAYMOND KURTZ MORLEY  
*Mathematics*  
Dean Hall, 10

## Courses in Arts and Sciences

---

[In the following list the course pursued by each student is indicated by the *Italic* letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and the Medical Preparatory, *mp*.]

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in *Italics*, in which latter case it is a part of the home address.

### Senior Class

d'Amaral, Joseph	<i>ce</i>	<i>Azores Islands</i>	Dean Hall, 11
Berry, Charles Franklin, Jr.	<i>ab</i>	<i>Mattapan</i>	Θ Δ X House
Bond, Alfred Moore	<i>ce</i>	<i>Hudson</i>	Δ T Δ House
Bray, Bertha	<i>ab</i>	<i>Tufts College</i>	98 <i>Professors Row</i>
Bray, Compton Durlin	<i>ab</i>	<i>Tufts College</i>	98 <i>Professors Row</i>
Burnell, William Victor	<i>ce</i>	<i>Medford Hillside</i>	West Hall, 18
Chism, James Whiton	<i>ee</i>	<i>Westford, Conn.</i>	East Hall, 3
Clark, Alice Wellington	<i>ab</i>	<i>Waltham</i>	Metcalf Hall, 3
Clark, Georgiana	<i>ab</i>	<i>Somerville</i>	60 <i>Central St.</i>
Clifford, John William	<i>ab</i>	<i>Naugatuck, Conn.</i>	Δ T House
Countway, Gussanda	<i>ab</i>	<i>Somerville</i>	28 <i>Robinson St.</i>
Crowell, Mertie	<i>ab</i>	<i>Woods Hole</i>	Metcalf Hall, 13
Curtis, Helen Clare	<i>ab</i>	<i>Addison, Me.</i>	Start House, 7
Doherty, Frederick Joseph Howard	<i>ee</i>	<i>Boston</i>	West Hall, 11
Draper, Ernest Sparrell	<i>ce</i>	<i>Wayland</i>	West Hall, 2
Druley, Elmer Morey	<i>ab</i>	<i>Belpre, O.</i>	Δ T House
Ellis, Arthur Eugene	<i>ch</i>	<i>Somerville</i>	16 <i>Day St.</i>
Fay, Harold	<i>ab</i>	<i>Tufts College</i>	Θ Δ X House
Fleming, Patrick William	<i>ee</i>	<i>Thorndike</i>	West Hall, 7
Forrest, Oscar Edmund	<i>ee</i>	<i>Medford</i>	Δ T House
Galarneau, Dennis Camille Amédée	<i>ab</i>	<i>Springfield</i>	West Hall, 10
Harmon, Betsy Barker	<i>ab</i>	<i>Adams</i>	Metcalf Hall, 1
Hazeltine, William Everett	<i>ce</i>	<i>Lynn</i>	West Hall, 2
Hennelly, Thomas Patrick	<i>ab</i>	<i>Waltham</i>	
Hill, Robert William	<i>ab</i>	<i>Salem</i>	West Hall, 6
Hill, Sherburne	<i>ce</i>	<i>Methuen</i>	Δ T House
Hood, James Henry	<i>ce</i>	<i>Franklin</i>	A T Ω House
Hooper, Blanche Heard	<i>ab</i>	<i>Tufts College</i>	124 <i>Professors Row</i>

McAllister, Florence Lillian	<i>ab</i>	<i>W. Somerville</i>	23 Wallace St.
McMahon, Charles Edward	<i>ab</i>	<i>Randolph</i>	West Hall, 10
Marr, Myron Whitmore	<i>mp</i>	<i>Dorchester</i>	Z Ψ House
Maxwell, Leon Ryder	<i>ab</i>	<i>Medford</i>	Δ T House
Moore, Fred Atkins	<i>ab</i>	<i>Somerville</i>	Paige Hall, 13
Morley, Raymond Kurtz	<i>ab</i>	<i>Newton Centre</i>	Dean Hall, 10
Munro, Melville Smith	<i>ce</i>	<i>Medford</i>	59 George St.
Newell, Lewis Winslow	<i>ab</i>	<i>Salem</i>	East Hall, 24
Norcross, Theodore White	<i>ce</i>	<i>Medford</i>	Δ T House
Parker, Clara Elizabeth	<i>ab</i>	<i>Middleboro</i>	Metcalf Hall, 9
Parker, Jessie Merrill	<i>ab</i>	<i>Uxbridge</i>	Start House, 3
Pearson, George Edward	<i>ab</i>	<i>W. Somerville</i>	325 Highland Ave.
Perkins, Henry Farnsworth	<i>me</i>	<i>Haverhill</i>	Δ T House
Phillips, Ethel May	<i>ab</i>	<i>W. Somerville</i>	1088 Broadway
Preble, Alfred Emerson	<i>bi</i>	<i>Wilmington</i>	
Preston, Mertie Belle	<i>ab</i>	<i>Somerville</i>	51 Jacques St.
Richardson, Harry Herbert	<i>ab</i>	<i>Cambridge</i>	230 Prospect St.
Roberts, Harriet Norma	<i>ab</i>	<i>Medford Hillside</i>	35 Emery St.
Russell, Clara Rebecca	<i>ab</i>	<i>Winchester</i>	182 Cambridge St.
Sander, Eleonore Henriette Thekla	<i>ab</i>	<i>Cambridge</i>	21 Holmes St.
Sanders, Annie Louisa	<i>ab</i>	<i>Wayland</i>	Metcalf Hall, 3
Saunders, Ernest Alexander	<i>ce</i>	<i>Somerville</i>	24 Powder House Ter.
Scoboria, Clarence Preston	<i>ab</i>	<i>Somerville</i>	Δ T Δ House
Spaulding, Rachel Josephine	<i>ab</i>	<i>Jaffrey, N. H.</i>	Metcalf Hall, 8
Standish, Clara May	<i>ph</i>	<i>Segreganset</i>	10 Lee St.
Teague, Donald Spencer	<i>ab</i>	<i>Caribou, Me.</i>	West Hall, 6
Tenney, Ruth	<i>ab</i>	<i>Auburn, Me.</i>	Metcalf Hall, 4
Titcomb, Grace	<i>ab</i>	<i>Farmington, Me.</i>	7 Francesca Ave.
Tompson, George Morris	<i>ce</i>	<i>Wakefield</i>	
Trout, Delmar Everett	<i>ab</i>	<i>Springfield, O.</i>	Paige Hall, 9
Tufts, Florence Augusta	<i>ab</i>	<i>Malden</i>	38 Clifton St.
Walker, Florence Helen	<i>ab</i>	<i>W. Somerville</i>	26 Wallace St.
Watkins, Clarence Elmore	<i>ab</i>	<i>S. Manchester, Conn.</i>	Δ T House
Wood, Edward Holton	<i>ce</i>	<i>Saco, Me.</i>	West Hall, 3

### Junior Class

Armstrong, Elias Benjamin	<i>ph</i>	<i>Waltham</i>	Dean Hall, 9
Atsatt, John Thornton	<i>ab</i>	<i>Mattapoisett</i>	A T Ω House
Bailey, Vesta Louise	<i>ab</i>	<i>W. Somerville</i>	50R College Ave.
Bean, William Wendell	<i>ce</i>	<i>W. Medford</i>	34 Canal St.
Bidwell, George Leslie	<i>ch</i>	<i>Jamaica Plain</i>	West Hall, 32
Bodge, Harold Heath	<i>ce</i>	<i>Westbrook, Me.</i>	Dean Hall, 3
Bowker, Ella Wallace	<i>ab</i>	<i>Somerville</i>	2 Hillside Ave.
Burnham, Fred Walker	<i>ab</i>	<i>Williamstown, Vt.</i>	East Hall, 12

Calderwood, Mellen Greely	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 26
Chevalier, Louis	<i>ce</i>	<i>Naugatuck, Conn.</i>	28 Professors Row
Chase, Alfred Whitman	<i>ce</i>	<i>Cambridge</i>	1667 <i>Cambridge St.</i>
Claus, Henry Turner	<i>ab</i>	<i>Saugus</i>	West Hall, 4
Cobb, Ernest	<i>ph</i>	<i>Tufts College</i>	<i>West Hall, 32</i>
Crockett, Ernest Dana	<i>me</i>	<i>Dexter, Me.</i>	Δ T House
Dodge, Waldo Edgar	<i>me</i>	<i>Hyde Park</i>	West Hall, 20
Dods, Francis Alexander	<i>ce</i>	<i>Somerville</i>	24 <i>Partridge Ave.</i>
Ewell, Walter Warren	<i>ce</i>	<i>Medford</i>	236 <i>Salem St.</i>
Farnum, Carrie Alice	<i>ab</i>	<i>Marlboro</i>	Metcalf Hall, 15
Farrar, Edward Leslie	<i>ce</i>	<i>Assinippi</i>	East Hall, 24
Ford, Herman Flagg	<i>ce</i>	<i>Danville, Me.</i>	West Hall, 30
Gammon, Robert Clair	<i>me</i>	<i>Lynn</i>	Δ T Δ House
Garton, Florence Harriet	<i>ab</i>	<i>W. Somerville</i>	113 <i>College Ave.</i>
Gay, George Willard, Jr.	<i>sc</i>	<i>Norwood</i>	Δ T House
Gordon, Harold Loring	<i>ce</i>	<i>Auburndale</i>	Δ T House
Guild, Emily Elizabeth	<i>ab</i>	<i>Brattleboro, Vt.</i>	Start House, 2
Harrington, Charles Ernest	<i>me</i>	<i>Lynn</i>	West Hall, 20
Hunt, Murray Harding	<i>sc</i>	<i>Worcester</i>	West Hall, 16
Jenks, Daniel Ashley	<i>ab</i>	<i>Holyoke</i>	Dean Hall, 9
Knight, Herbert Carr	<i>ce</i>	<i>Woodfords, Me.</i>	West Hall, 30
Loring, Seth Arthur	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 7
Lovejoy, Arthur Waldo	<i>ab</i>	<i>Lowell</i>	Θ Δ X House
Lowe, George Albert, Jr.	<i>ce</i>	<i>Rockport</i>	A T Ω House
McCoy, Florence Lydia	<i>ab</i>	<i>Somerville</i>	62 <i>Main St.</i>
Marshall, Wilnah Virginia	<i>ph</i>	<i>New Salem</i>	Metcalf Hall, 5
Milner, John George	<i>ce</i>	<i>Somerville</i>	West Hall, 12
Morrison, Donald	<i>ab</i>	<i>Skowhegan, Me.</i>	Dean Hall, 4
Munroe, Carrie Josephine	<i>ab</i>	<i>Somerville</i>	70 <i>Myrtle St.</i>
Parks, Ralph Silas	<i>ab</i>	<i>Hudson</i>	East Hall, 14
Perry, Luther Packard	<i>ce</i>	<i>Shelburne Falls</i>	East Hall, 2
Powers, Lorin Charles	<i>ab</i>	<i>Washington, D. C.</i>	West Hall, 28
Sanders, Amalie Cecilia Dorothea	<i>ab</i>	<i>Methuen</i>	Metcalf Hall, 2
Shaw, Frank Leslie	<i>ab</i>	<i>Augusta, Me.</i>	A T Ω House
Stone, Charles Henry	<i>sc</i>	<i>Waterbury Ctr., Vt.</i>	24 <i>Emery St.</i>
Swansey, Katherine Josephine	<i>ab</i>	<i>Somerville</i>	102 <i>Prospect St.</i>
Sweetser, Sidney Pulsifer	<i>ab</i>	<i>Philadelphia, Pa.</i>	West Hall, 27
Symmes, Gertrude Locke	<i>ab</i>	<i>Winchester</i>	77 <i>Main St.</i>
Taylor, Chester Emerson	<i>me</i>	<i>Clinton</i>	Δ T House
Taylor, Mabelle Woodbury	<i>ab</i>	<i>Hudson</i>	Start House, 6
Temple, Charles Hosea	<i>ab</i>	<i>Hinsdale, N. H.</i>	Paige Hall, 1
Viles, Blynn Fred	<i>ce</i>	<i>Medford</i>	81 <i>Main St.</i>
Warner, George Loring	<i>ab</i>	<i>Palmer</i>	Z Ψ House



Wellman, Hugh Horace	<i>ce</i>	<i>Westminster West, Vt.</i>	West Hall, 18
Wheeler, Grace Inez	<i>ab</i>	<i>Milan, N. H.</i>	Start House, 6
Whitehouse, Wendell Lewis	<i>ch e</i>	<i>Somerville</i>	74 <i>Glenwood Road</i>
Whitney, Howard Rogers	<i>ce</i>	<i>Somerville</i>	107 <i>Sycamore St.</i>
Williams, Arthur	<i>ab</i>	<i>Charlestown</i>	1 <i>Prospect St.</i>
Wilson, Harry Percival	<i>ce</i>	<i>Worcester</i>	West Hall, 11
Wise, William Mason	<i>ab</i>	<i>West Newton</i>	Θ Δ X House
Witham, Ernest Clair	<i>sc</i>	<i>Westbrook Me.</i>	West Hall, 19
Woodbury, Charles Harlow	<i>ab</i>	<i>Auburn, Me.</i>	Z Ψ House
Woodward, Frank Coy	<i>ce</i>	<i>East Pepperell</i>	Dean Hall, 1
Works, Austin Melvin	<i>ab</i>	<i>Somerville</i>	214 <i>Medford St.</i>

## Sophomore Class

Abbe, Arthur James	<i>ab</i>	<i>Springfield</i>	West Hall, 27
Abbott, John Blackler	<i>ch</i>	<i>E. Bethel, Vt.</i>	East Hall, 1
Ames, Harvey Libby]	<i>me</i>	<i>Somerville</i>	120 <i>Perkins St.</i>
Boardman, Seth Howard	<i>ee</i>	<i>Georgetown</i>	A T Ω House
Buckley, James Robert	<i>ab</i>	<i>No. Grosvenordale, Ct.</i>	West Hall, 14
Buxton, Sara Lucy	<i>ab</i>	<i>Somerville</i>	286 <i>Highland Ave.</i>
Cannell, Wirt Virgin	<i>ce</i>	<i>Bridgton, Me.</i>	East Hall, 21
Chandler, Eva Lillian	<i>ab</i>	<i>Barton Landing, Vt.</i>	Metcalf Hall 10
Chapin, Charles Mathews	<i>ab</i>	<i>Rockland, Me.</i>	West Hall, 26
Cheney, Genevieve Henrietta	<i>ab</i>	<i>Delevan, N. Y.</i>	Metcalf Hall, 2
Clement, Fannie May	<i>ab</i>	<i>Everett</i>	4 <i>Dean St.</i>
Coupal, James Francis	<i>sc</i>	<i>Everett</i>	West Hall, 16
Cousins, Clarence Edwin	<i>ab</i>	<i>Salem</i>	East Hall, 11
Crowell, Freeman Shedd	<i>e</i>	<i>Lowell</i>	West Hall, 22
Currier, Rudolph Winfield	<i>ab</i>	<i>Lynn</i>	East Hall, 13
Cutler, Leon George	<i>e</i>	<i>No. Montpelier, Vt.</i>	Z Ψ House
Dix, Leon Edward	<i>e</i>	<i>Hartford, Conn.</i>	East Hall, 7
Dole, Henry Haile	<i>e</i>	<i>Arlington</i>	361 <i>Massachusetts Ave.</i>
Douglas, Jerome Harvey	<i>ee</i>	<i>Hull</i>	West Hall, 22
Dow, Roy Gay	<i>ee</i>	<i>Bridgton, Me.</i>	67 <i>Prescott St., W. Medford</i>
Dustin, Maurice Nathaniel	<i>c</i>	<i>Dexter, Me.</i>	Δ T House
Edwards, Alice Hayward	<i>ab</i>	<i>W. Somerville</i>	Start House, 7
Ellis, Herbert Cram	<i>me</i>	<i>Detroit, Mich.</i>	Z Ψ House
Farnsworth, Dana Tufts	<i>ab</i>	<i>Taunton</i>	West Hall, 29
Fisher, William Ernest	<i>ce</i>	<i>W. Somerville</i>	26 <i>Hancock St.</i>
Fogg, Ralph Justin	<i>ce</i>	<i>Lynn</i>	East Hall, 13
Foss, Fred Gilman	<i>ee</i>	<i>North Andover</i>	East Hall, 9
Graves, Otho McCarroll	<i>ce</i>	<i>Willimantic, Conn.</i>	West Hall, 23
Gudge, Benjamin Joseph	<i>ee</i>	<i>White City, Kan.</i>	Dean Hall, 2
Hall, Alfred Vargrave	<i>ab</i>	<i>Peru, Me.</i>	Δ T House
Haskell, Harold Clifford	<i>ab</i>	<i>Rockland, Me.</i>	Z Ψ House

Hayes, Chester Adams, Jr.	<i>ee</i>	<i>No. Berwick, Me.</i>	East Hall, 7
Hayes, Will Francis	<i>mp</i>	<i>Georgetown</i>	West Hall, 3
Hickey, Edwin Ernest	<i>me</i>	<i>Cambridge</i>	East Hall, 1
Holden, Joseph William	<i>ce</i>	<i>Meriden, Conn.</i>	East Hall, 34
Inglis, Henry Baxter	<i>ee</i>	<i>Detroit, Mich</i>	ZΨ House
Jackson, Mabel Estella	<i>ab</i>	<i>Lexington</i>	Start House, 1
Jackson, Minnie Wallis	<i>ab</i>	<i>Medford</i>	47 <i>Fulton St.</i>
Johnson, Phebe Chandler	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 13
Jones, John Paul	<i>ee</i>	<i>Woburn</i>	662 <i>Main St.</i>
Judkins, Agnes Frances	<i>ab</i>	<i>Merrimac</i>	Metcalf Hall, 16
Knowlton, Edward Allen	<i>ab</i>	<i>New Bedford</i>	West Hall, 25
Lamb, Norval Edmund	<i>ch e</i>	<i>Attleboro</i>	West Hall, 9
Lendall, Harry Nelson	<i>ce</i>	<i>Lynn</i>	West Hall, 29
Mackenzie, Fred Ross	<i>ab</i>	<i>Cliftondale</i>	West Hall, 4
Mann, Bertha Hill	<i>ab</i>	<i>Norway, Me.</i>	Start House, 5
Metcalf, Ernest George	<i>ab</i>	<i>Brooklyn, N. Y.</i>	ZΨ House
Merrill, Carle Jewett	<i>me</i>	<i>Somerville</i>	339 <i>Summer St.</i>
Michael, Herbert Ledlie	<i>ab</i>	<i>Kingston, N. Y.</i>	West Hall, 25
Miller, George Stewart	<i>ab</i>	<i>No. Andover</i>	East Hall, 11
Mullen, John Joseph	<i>ce</i>	<i>Wellesley</i>	East Hall, 6
Nash, Curtis Whithed	<i>ab</i>	<i>Winchester</i>	ZΨ House
Noyes, Marion Temple	<i>ab</i>	<i>W. Somerville</i>	15 <i>Park Ave.</i>
Nye, Laila Campbell	<i>ab</i>	<i>W. Somerville</i>	33 <i>Electric Ave.</i>
Page, Arthur Smith	<i>ee</i>	<i>Everett</i>	36 <i>Dean St.</i>
Paine, Alice Peabody	<i>ab</i>	<i>Groveland</i>	Start House, 1
Peterson, John Ferdinand	<i>ee</i>	<i>Lynn</i>	East Hall, 34
Phillips, Leslie Blaine	<i>ee</i>	<i>W. Somerville</i>	1088 <i>Broadway</i>
Priest, Alice Eaton	<i>ab</i>	<i>Canton, N. Y.</i>	Start House, 3
Ringdahl, Frederick Wilhelm	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 16
Roberts, Charles Fred	<i>ce</i>	<i>Caribou, Me.</i>	Δ T House
Saunders, Louise Melbourne	<i>ab</i>	<i>Somerville, 24 Powder House Terrace</i>	
Seery, Francis Joseph	<i>ce</i>	<i>Waterbury, Conn.</i>	East Hall, 27
Shearer, Gordon Grant	<i>ee</i>	<i>Somerville</i>	44 <i>Morrison Ave.</i>
Sibley, Ruth Annie	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 12
Small, Florence Estelle	<i>ab</i>	<i>So. Portland, Me.</i>	Start House, 4
Smith, Richard Curtis	<i>ce</i>	<i>Medford</i>	42 <i>Dudley St.</i>
Speirs, Ernest L.	<i>ee</i>	<i>Westbrook, Me.</i>	West Hall, 9
Steele, Martha Taylor	<i>ab</i>	<i>Stoughton</i>	Metcalf Hall, C
Tewksbury, Ella May	<i>ab</i>	<i>Lexington</i>	12 <i>Hancock Ave.</i>
Tripp, Angie May	<i>ab</i>	<i>Woburn</i>	2 <i>Eastern Ave.</i>
Vickery, Reina Gladys	<i>ab</i>	<i>Lexington</i>	<i>Percy Road</i>
Whitman, Clara Hattie	<i>ab</i>	<i>Fishers Island, N. Y.</i>	Metcalf Hall, A
Whitman, Hugh Redway	<i>ab</i>	<i>Fishers Island, N. Y.</i>	West Hall, 31
Winslow, Geoffrey	<i>ce</i>	<i>New Bedford</i>	West Hall, 23

## Freshman Class

Armstrong, Marjorie Wright	sc	Somerville	112 Sycamore St.
Backus, Florence Erie	ab	Somerville	67 Curtis St.
Backus, John Alexander	ee	Somerville	26 Kidder Ave.
Bacon, Theodore Sheldrake	e	Waltham	22 School St.
Baker, Lester David	e	Bridgeport, Ct.	East Hall, 30
Barry, Walter Vincent	e	Portland, Conn.	East Hall, 16
Bartlett, Gertrude Elisabeth	sc	Kingston, N. H.	Metcalf Hall, 6
Bean, Charles Franklin Kingsbury	sc	W. Medford	51 Harvard Ave.
Benoit, Armand William	e	Lawrence	East Hall, 32
Bertwell, Margaret May	ab	Somerville	48 Cameron Ave.
Blake, William Edwin	ab	Huntington	East Hall, 4
Buchanan, Perley J.	e	Barre, Vt.	East Hall, 8
Burrage, Alvah Lowell	e	Lowell	East Hall, 18
Case, Ralph Edward	e	Albany, N. Y.	West Hall, 31
Clare, Charles Henry	e	Quincy	East Hall, 28
Clarke, Bertrand Moody	ab	Waltham	Dean Hall, 7
Cliff, Joseph Arthur	e	New Dorchester	67 Edson St.
Coggan, Linus Child	ab	Malden	Dean Hall, 7
Colbert, Leo Otis	e	Charlestown	34 Union St.
Conner, Carlton Nudd	e	Lynn	East Hall, 25
Crawford, Irena May	ab	North Dana	Metcalf Hall, 11
Cummings, George Smith	e	Lynn	East Hall, 9
Curtiss, Prudence	ab	Hingham	Start House, 5
Davis, Clarence Benjamin	e	Lowell	East Hall, 18
Derry, Harold Woodard	e	N. Attleboro	East Hall, 31
Dickinson, Frank Leroy	ch	Woodstock, N. B.	East Hall, 8
Dillingham, Alexander	e	Bridgeport, Conn.	East Hall, 30
Doherty, Mary Louise	ab	Woburn	15 Monroe St.
Douglas, Maude Geraldine	ab	Hull	Metcalf Hall, 11
Drew, Philip Augustine	e	Portland, Maine	West Hall, 21
Drummond, Eva Alberta	ab	Brattleboro, Vt.	Start House, 4
Duffey, Cornelius Francis	e	East Weymouth	33 Yarmouth St., Boston
Dwellely, Charles Theodore	e	Arlington Hts.	146 Park Ave.
Eveleth, Norris Pulsifer	e	Auburn, Me.	165 College Ave.
Finley, Joseph Arthur	sc	Natick	West Hall, 13
Folsom, Josie Burbank	ab	Medford	35 College Ave.
Ganteaume, Alphonse	e	Trinidad, B. W. I.	119 Adams St.
Geer, George Independence	np	Westbrook, Me.,	East Hall, 25
Hadley, Norris Edmund	e	Somerville	35 Conwell Ave.
Hahn, Frances Anna	ab	Everett	12 Bennett St.
Hannah, Persis Dwight	ab	Medford	53 Oakland St.
Hanscom, Henry Blake	ab	Leeds Junction, Me.	Δ T House

Harris, George Wesley	<i>ab</i>	<i>Boston</i>	West Hall, 16½
Horr, Howard Atkinson	<i>e</i>	<i>So. Sudbury</i>	
Jeffers, Robert Buck	<i>e</i>	<i>Chelsea</i>	West Hall, 5
Jones, Chester Hardy	<i>e</i>	<i>Norwood</i>	East Hall, 5
Joski, Sadie	<i>sc</i>	<i>Roxbury</i>	436 Dudley St.
Knowlton, Frank Weston	<i>e</i>	<i>Chelsea</i>	West Hall, 24
Lakin, Roger	<i>ab</i>	<i>So. Braintree</i>	Dean Hall, 5
Lewis, Frederick William	<i>e</i>	<i>Bethlehem, N. H.</i>	East Hall, 19
Lomax, George Chester	<i>e</i>	<i>Somerville</i>	7 Miller St.
Lowell, James Brower	<i>e</i>	<i>Somerville</i>	37 Harvard St.
Manotas, Carlos Manuel	<i>mp</i>	<i>Colombia, S. A.</i>	
		24 Emery St., Medford Hillside	
Matthews, John Ormsby, Jr.	<i>ab</i>	<i>Palmer</i>	West Hall, 8
McGourty, John Farrell	<i>me</i>	<i>Boston</i>	22 Francis St.
Mergendahl, Titus Eugene	<i>e</i>	<i>Kingston, N. Y.</i>	East Hall, 29
Moore, Percy Roberts	<i>e</i>	<i>Montgomery</i>	East Hall, 4
Nason, Percy Durell	<i>e</i>	<i>Bethlehem, N. H.</i>	East Hall, 19
Nelson, Harry Merton	<i>e</i>	<i>East Ryegate, Vt.</i>	West Hall, 14
Neville, Gertrude Alena	<i>ab</i>	<i>Woburn</i>	22 Kilby St.
Ober, Ernest Chester	<i>e</i>	<i>Northeast Harbor, Me.</i>	West Hall, 13
Orne, Marion Frances	<i>ab</i>	<i>Somerville</i>	43 Fairmount Ave.
Packard, Merton Foster	<i>e</i>	<i>Marion</i>	East Hall, 33
Phelan, John Joseph	<i>e</i>	<i>Lowell</i>	245 Gorham St.
Proctor, Fred Willis	<i>ce</i>	<i>Wilton, N. H.</i>	East Hall, 6
Reynolds, Frank Leo Sinclair	<i>mp</i>	<i>Vernon Ctr., N. Y.</i>	Dean Hall, 8
Rich, Marion	<i>ab</i>	<i>Chelsea</i>	Metcalf Hall, 6
Russell, Albert Irons	<i>sc</i>	<i>Providence, R. I.</i>	West Hall, 5
Sanborn, John Freeman	<i>ce</i>	<i>Newmarket, N. H.</i>	West Hall, 15
Savage, Howard James	<i>ab</i>	<i>Meriden, Conn.</i>	West Hall, 19
Smead, Alfred Felton	<i>me</i>	<i>Greenfield</i>	West Hall, 17
Smith, Hugh Wallace	<i>ab</i>	<i>Everett</i>	565 Broadway
Smith, Madison James	<i>e</i>	<i>Bartlett, N. H.</i>	East Hall, 21
Starrett, Arthur Rawson	<i>e</i>	<i>N. Andover</i>	East Hall, 17
Sturtevant, Ethel Powys	<i>ab</i>	<i>Somerville</i>	78 Columbus Ave.
Sullivan, Patrick Joseph	<i>e</i>	<i>Charlestown</i>	47 Baldwin St.
Sullivan, Eugene Joseph	<i>ab</i>	<i>Boston</i>	81 Mountfort St.
Tarr, Harold Eugene	<i>e</i>	<i>Lowell</i>	East Hall, 20
Tay, Samuel Wright	<i>e</i>	<i>Medford</i>	288 Forest St.
Thorpe, Winnifred Rosamond	<i>ab</i>	<i>Highlandville</i>	Metcalf Hall, 10
Todd, Arthur Oswald	<i>e</i>	<i>Trinidad, B. W. I.</i>	
		119 Adams St., Medford	
Turner, Harlan Barzillai	<i>e</i>	<i>Portland, Me.</i>	West Hall, 24
Ungar, Frida Emily	<i>ab</i>	<i>Roxbury</i>	2 Dudley Pl.
Warner, Willis Chauncey	<i>e</i>	<i>Cromwell, Ct.</i>	East Hall, 33

Wilson, Edgar Perkins	<i>e</i>	<i>New Rochelle, N. Y.</i>	West Hall, 8
Wilson, Harold David	<i>e</i>	<i>Shelburne Falls</i>	East Hall, 5
Woodward, Herbert Watson	<i>e</i>	<i>Somerville</i>	
		<i>171 Powder House Boulevard</i>	
Wyckoff, Joseph Ray	<i>ab</i>	<i>Franklin</i>	Dean Hall, 3
Alvarenga, Francisco Bento de	<i>e</i>	<i>San Paulo, Brazil</i>	East Hall, 16
Maxwell, James Davidson	<i>mp</i>	<i>Bangor, Me.</i>	Dean Hall, 4
Porter, Bella Celia	<i>ab</i>	<i>Stoughton</i>	Metcalf Hall, C

### Special Students

Aldrich, Bertha Alice	<i>No. Cambridge</i>	<i>27 Blake St.</i>
III. <i>Music</i>		
Brown, Dorothy Margaret Temple	<i>Winchester</i>	Metcalf Hall, 14
II. <i>Music and Biology</i>		
Crabtree, Arthur Howard	<i>Somerville</i>	<i>112 Glenwood Road</i>
II. <i>Surveying</i>		
Dunn, Winfield Tilley	<i>Cambridge</i>	<i>207 Green St.</i>
I. <i>Chemistry</i>		
Eames, Louise Bradley	<i>Reading</i>	Metcalf Hall, 14
II. <i>Modern Languages and Music</i>		
Fox, Carrie Edwards	<i>Roxbury</i>	<i>24 Waban St.</i>
I. <i>Greek</i>		
Fraser, Beatrice May	<i>Somerville</i>	<i>16 Porter St.</i>
I. <i>English</i>		
Harris, Ada Ellsworth	<i>Somerville</i>	<i>33 Mt. Vernon St.</i>
I. <i>English</i>		
Hazeltine, Clyda Blanche	<i>W. Somerville</i>	<i>20 Day St.</i>
III. <i>Modern Languages</i>		
Honey, James Albert	<i>Pretoria, So. Africa</i>	
I. <i>Philosophy</i>	<i>35 Kidder Ave., W. Somerville</i>	
Mulvey, Ernest Claffey	<i>Worcester</i>	East Hall, 31
I. <i>Economics.</i>		
Park, Florence Colburn	<i>Winchester</i>	<i>12 Norwood St.</i>
III. <i>Music</i>		
Prince, Percy Sylvester	<i>Salem</i>	West Hall, 12
II. <i>English</i>		

# Divinity School

---

## Fourth Year

Bowers, William Wilgus	<i>Reading</i>	Paige Hall, 16
------------------------	----------------	----------------

## Third Year

Emmons, Charles Henry	<i>Bridgeport, Conn.</i>	Paige Hall, 6
Howes, George Henry	<i>Lowell</i>	Paige Hall, 7
Lewis, George Hallam	<i>Meriden, Conn.</i>	Paige Hall, 31
Miller, George Arthur	<i>N. Attleboro</i>	Paige Hall, 30

## Second Year

Angel, Frank James	<i>East Aurora, N. Y.</i>	Paige Hall, 36
Gay, George Augustus	<i>Meriden, Conn.</i>	Paige Hall, 19
Parkhurst, Henry Adams	<i>Dunstable</i>	Paige Hall, 25
Raspe, Otto Steinehofer	<i>Baltimore, Md.</i>	Paige Hall, 34
Willis, Sidney Joel	<i>West Concord, Vt.</i>	Paige Hall, 24

## Special Students

Gale, Howard Charles	<i>Haverhill</i>	Paige Hall, 22
Weakley, James Richard	<i>Philadelphia, Pa.</i>	Paige Hall, 4

## FIVE YEAR A.B.-B.D. COURSE

### Third Year

Hersey, Harry Adams, A.B., 1903	<i>Dorchester</i>	Paige Hall, 12
Lobdell, Nelson Lyman, A.B. (St. L.)	<i>Victor, N. Y.</i>	Paige Hall
Moore, Fred Atkins	<i>Somerville</i>	Paige Hall, 13
Temple, Charles Hosea	<i>Hinsdale, N.H.</i>	Paige Hall, 1

### Second Year

Trout, Delmar Everett	<i>Springfield, O.</i>	Paige Hall, 9
-----------------------	------------------------	---------------



## Bromfield-Pearson School

---

Alpaugh, Walter George	<i>Willimantic, Conn.</i>	West Hall, 21
Ballou, Ernest Arlon	<i>Portsmouth, N. H.</i>	East Hall, 14
Dickenson, Theo Edward	<i>Kansas City, Mo.</i>	
	78 Rogers Ave., Somerville	
Doherty, James Thomas	<i>So. Boston</i>	173 K St.
Flint, Lester Sylvanus	<i>Everett</i>	16 Waverly Ave.
Farrand, Arthur Mallalieu	<i>Whitinsville</i>	East Hall, 26
Hanley, James Francis	<i>Concord</i>	
Hatch, Fred Eugene	<i>Kezar Falls, Me.</i>	
	9 Dearborn St., Medford	
Hunt, Arthur Harry	<i>So. Boston</i>	401 E. Seventh St.
Ingalls, James Leon	<i>Whitinsville</i>	East Hall, 26
Killpatrick, Clarence Thomas	<i>Lowell</i>	East Hall, 20
Knowles, Charles H.	<i>Cambridge</i>	16 Carver St.
Norwood, Edgar Alva	<i>Rockport</i>	85 Ferry St., Everett
O'Donnell, Michael James	<i>Boston</i>	42 Washburn St.
Patchen, Frank Fanton	<i>Danbury, Conn.</i>	East Hall, 29
Payrow, Harry Gordon	<i>Lynn</i>	17 Chase St.
Russell, Ernest Wilmot	<i>Rockport</i>	East Hall, 15
Sanborn, Levi Newell	<i>Hampton Falls, N.H.</i>	East Hall, 28
Svensen, Carl Lars	<i>Switzerland</i>	
	312 Boston Ave., Medford	
Willy, Max Paul	<i>New Orleans, La.</i>	East Hall, 23

# Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

---

## Fourth Year

Abbott, Harry Daniel . . . . .	<i>Salem</i>
Ameno, Joseph Louis . . . . .	<i>Boston</i>
Anderson, John Hammond . . . . .	<i>Quincy</i>
Bennett, William Henry . . . . .	<i>Roxbury</i>
Biron, Wilfred Louis . . . . .	<i>Manchester, N. H.</i>
Brady, Frank Robert . . . . .	<i>Lowell</i>
Buckley, Daniel Joseph . . . . .	<i>Arlington</i>
Bushold, Fred George . . . . .	<i>Lawrence</i>
Carley, Margaret Elizabeth . . . . .	<i>Boston</i>
Chandler, Clarence Luther . . . . .	<i>Townsend</i>
Chase, Lawrence Milton . . . . .	<i>W. Duxbury</i>
Chase, James Smalley . . . . .	<i>W. Duxbury</i>
Dailey, Edward Joseph . . . . .	<i>Somerville</i>
Dearborn, Luther Gould, Jr., A.B. . . . .	<i>Somerville</i>
Faxon, Eudora Winifred . . . . .	<i>Boston</i>
Gettings, Thomas Lawrence . . . . .	<i>Fall River</i>
Harrington, Robert Brine . . . . .	<i>Somerville</i>
Harrison, Henry . . . . .	<i>Ware</i>
Hastings, Gertrude Wentworth, A.B. (Cornell) . . . . .	<i>Winthrop</i>
Holt, Lucinda Mary-Belle, B.L. (Smith) . . . . .	<i>Portland, Me.</i>
Kenney, Walter Clement . . . . .	<i>Sharon, Vt.</i>
Levins, Nathan Noah . . . . .	<i>Boston</i>
McGurn, William J. . . . .	<i>Bridgewater</i>
Murphy, Charles Augustus . . . . .	<i>Boston</i>
Murphy, Thomas William . . . . .	<i>Lawrence</i>
Myles, Leo Thomas . . . . .	<i>Cambridge</i>
Patterson, Alice Maria, M.D. . . . .	<i>Peabody</i>
Pease, Charles Valentine . . . . .	<i>Dorchester</i>
Peterson, Clark Kimball . . . . .	<i>E. Boston</i>
Pofcher, Elias Harris . . . . .	<i>Everett</i>
Reilly, Thomas Ignatius . . . . .	<i>Brockton</i>
Robinson, Philip Eaton . . . . .	<i>Boston</i>
Robison, J. Collier . . . . .	<i>Fillmore City, Utah</i>
Schmidt, Richard Diedrich . . . . .	<i>Roxbury</i>
Seymour, Horace Darling . . . . .	<i>Warren, R. I.</i>

Shay, Charles Edwin . . . . .	<i>Roxbury</i>
Smith, William Morgan . . . . .	<i>Jamaica Plain</i>
Stockbridge, Alberto Horatio . . . . .	<i>Cochituate</i>
Stoodley, Harry Marr . . . . .	<i>Somerville</i>
Sullivan, Cornelius Augustine . . . . .	<i>Everett</i>
Toohey, Thomas Victor . . . . .	<i>Roxbury</i>
Tower, Freeman Augustus, A.B. . . . .	<i>Sterling Junction</i>
Walch, Joseph Francis . . . . .	<i>Lawrence</i>
Wallace, Annie Marie . . . . .	<i>West Gore, N. S.</i>
Woodill, Edith Esty . . . . .	<i>Dorchester</i>

### Third Year

Bigelow, Alice Houghton, A.B. (Boston Univ.)	<i>Jamaica Plain</i>
Bogan, Frederic Leon . . . . .	<i>Charlestown</i>
Brassil, Timothy Francis . . . . .	<i>Cambridge</i>
Brearton, Edward John . . . . .	<i>South Boston</i>
Breen, James Henry . . . . .	<i>Hudson</i>
Brown, Edison William . . . . .	<i>Dorchester</i>
Carvill, Lizzie Maud, A.B. . . . .	<i>Somerville</i>
Cox, Ann Caroline . . . . .	<i>Boston</i>
Corey, Frederick Hall . . . . .	<i>Roxbury</i>
Curry, Ernest Francis . . . . .	<i>Melrose Highlands</i>
Curtis, Alton Kallock . . . . .	<i>Boston</i>
Derby, Fred William . . . . .	<i>Arlington</i>
Dunham, Adeline Frances . . . . .	<i>Boston</i>
Dutcher, William Austin . . . . .	<i>Boston</i>
Dwyer, William Joseph . . . . .	<i>Cambridge</i>
Eddy, Merritt Otis . . . . .	<i>Townshend, Vt.</i>
Fiske, Rebecca Cutter . . . . .	<i>Grafton</i>
Foster, Maude Ashley . . . . .	<i>Melrose</i>
Galbraith, Anna Veitch . . . . .	<i>Victoria, Canada</i>
Gile, Frank Herbert, Jr. . . . .	<i>Melrose</i>
Goddu, Louis Adolore Oliver, Ph.G. (Mass. Coll. Phar.)	<i>Winchester</i>
Hammond, Harry Weymouth . . . . .	<i>Boston</i>
Hardwick, Sydney Curtis . . . . .	<i>Quincy</i>
Henry, Thomas Francis . . . . .	<i>Salem</i>
Hinchliffe, Frederick . . . . .	<i>Clayville, N. Y.</i>
Houghton, Richard Henry . . . . .	<i>E. Boston</i>
Hussey, William Francis . . . . .	<i>Boston</i>
Janes, Arthur Percy . . . . .	<i>Boston</i>
Kendricken, Joseph Thomas . . . . .	<i>Boston</i>
Kelly, John M. . . . .	<i>Dorchester</i>
Kelly, Harvey Augustine . . . . .	<i>Dorchester</i>
Kennison, Frederick Marshman . . . . .	<i>Boston</i>

Landers, George Bagnell . . . . .	<i>Chelsea</i>
Long, Merritt Allen . . . . .	<i>Manchester</i>
McCarthy, Eugene Justin . . . . .	<i>Malden</i>
McCarthy, Francis Patrick . . . . .	<i>Boston</i>
McLaughlin, John David . . . . .	<i>E. Boston</i>
McMahon, Michael Francis Edward . . . . .	<i>Worcester</i>
Mayrand, Eugene . . . . .	<i>Lowell</i>
Medalia, Leon Sam Abrahams . . . . .	<i>Boston</i>
Murphy, Frederick Paul . . . . .	<i>Lowell</i>
Murphy, Frederick Vincent . . . . .	<i>Brockton</i>
Murphy, Anna Frances . . . . .	<i>Nashua, N. H.</i>
Nolan, James Patrick Augustus . . . . .	<i>Boston</i>
Noyes, William Nelson . . . . .	<i>Portsmouth, N. H.</i>
Ober, Frank Roberts . . . . .	<i>Northeast Harbor, Me.</i>
O'Brien, William Smith . . . . .	<i>Marlboro</i>
Ordway, Mabel Dyer . . . . .	<i>Jamaica Plain</i>
Palmer, Louis James . . . . .	<i>Boston</i>
Plunkett, Harold Brabazon . . . . .	<i>Lowell</i>
Rand, Anna Ethel . . . . .	<i>Worcester</i>
Richardson, Horace Kimball . . . . .	<i>Medford</i>
Roach, Alfred John . . . . .	<i>Lowell</i>
Rochford, Grace Elizabeth . . . . .	<i>Wellesley</i>
Rogers, Frank Norwood . . . . .	<i>Dedham</i>
Rowe, Carl Allen . . . . .	<i>Franklin, N. H.</i>
Shaw, Matthew Albert Neil . . . . .	<i>Boston</i>
Scannell, James Joseph, A.B. (St. Bonaventure)	<i>Roxbury</i>
Sherman, George Ernest . . . . .	<i>Cambridge</i>
Simon, Arthur Leslie . . . . .	<i>Waltham</i>
Smith, Myrtle . . . . .	<i>Somerville</i>
Stacey, Winthrop Downing . . . . .	<i>Charlestown</i>
Taylor, Maude Winnifred . . . . .	<i>Hartford, Conn.</i>
Thompson, Harold Fenton . . . . .	<i>Boston</i>
Tinkham, Oliver Goldsmith . . . . .	<i>Weymouth</i>
Tucker, Arthur Wallace . . . . .	<i>Chelsea</i>
Tyson, Forrest Clark . . . . .	<i>Tipton, Mich.</i>
Wagner, Emma Juliet . . . . .	<i>Boston</i>
Walsh, Joseph . . . . .	<i>Augusta, Me.</i>
Walker, William Dacre . . . . .	<i>Peabody</i>
Warren, Lizzie Maude . . . . .	<i>New Boston, N. H.</i>
Weeden, Allen Augustus . . . . .	<i>Providence, R. I.</i>
Whelan, Charles, B.S. (Dartmouth) . . . . .	<i>Weymouth</i>
Winslow, Guy Monroe, Ph.D . . . . .	<i>Newton</i>
Wood, Albert John . . . . .	<i>Allston</i>

Young, Charles Henry . . . . .	<i>Woburn</i>
Zaratt, Josefa . . . . .	<i>San Juan, Porto Rico</i>

## Second Year

Bagnall, Arthur Wallace . . . . .	<i>Roslindale</i>
Baker, Myron Clarke . . . . .	<i>Knoxville, Tenn.</i>
Barstow, Andrew Thaddeus . . . . .	<i>E. Braintree</i>
Bates, Lewis Beals . . . . .	<i>N. Weymouth</i>
Bazin, Edmond . . . . .	<i>Haverhill</i>
Besse, Frank Adelbert, D.M.D. . . . .	<i>Provincetown</i>
Bickford, Wallace Mellen . . . . .	<i>Portland, Me.</i>
Bradbury, Walter Lyman . . . . .	<i>Boston</i>
Brown, William James . . . . .	<i>Boston</i>
Bruce, John Rufus . . . . .	<i>E. Weymouth</i>
Butler, John Dennison . . . . .	<i>Boston</i>
Caldwell, Joseph Davis . . . . .	<i>Waltham</i>
Callahan, John Francis . . . . .	<i>Pawtucket</i>
Campbell, William Marie . . . . .	<i>Dorchester</i>
Carley, Frederick James . . . . .	<i>Tewksbury</i>
Carr, Gladys Lydia . . . . .	<i>Chelsea</i>
Carr, Dennis Henry . . . . .	<i>Dorchester</i>
Chalmers, Hattie Elizabeth . . . . .	<i>Hudson</i>
Coburn, Clarence Orrin . . . . .	<i>Manchester, N. H.</i>
Cogan, Henry James . . . . .	<i>Hyde Park</i>
Cole, Ralph Waldo Emerson . . . . .	<i>Franklin Falls, N. H.</i>
Cotter, Edward Joseph . . . . .	<i>Roxbury</i>
Cowan, Marion . . . . .	<i>Lynn</i>
Crimmin, Philip Patrick . . . . .	<i>Brockton</i>
Crowley, John Joseph . . . . .	<i>Everett</i>
Cummings, John Francis . . . . .	<i>Brockton</i>
David, Olier Joseph . . . . .	<i>Lowell</i>
Davis, Ernest Leland . . . . .	<i>Springfield</i>
Day, Cushman . . . . .	<i>Boston</i>
Deacon, Thomas Irving . . . . .	<i>Cambridge</i>
Derrick, Joseph Stephen . . . . .	<i>Charlestown</i>
Doran, John Michael . . . . .	<i>Boston</i>
Doonan, Henry Edward . . . . .	<i>Wellesley</i>
Dougherty, William Joseph . . . . .	<i>Manchester</i>
Eaton, Marland Hooper . . . . .	<i>Beverly</i>
Fallon, Joseph Francis . . . . .	<i>Brookline</i>
Felch, Lewis Perley . . . . .	<i>Boston</i>
Fletcher, Arthur Stanton . . . . .	<i>Waterville, Me.</i>
Fletcher, Christopher . . . . .	<i>Chelsea</i>
Ford, Foster Studley . . . . .	<i>N. Grafton</i>

Foss, Ralph Emery . . . . .	<i>Peabody</i>
Foster, George Sanford . . . . .	<i>Manchester, N. H.</i>
Gage, Arthur Tenney . . . . .	<i>Winchester</i>
Gately, Mary Agatha Murray . . . . .	<i>Boston</i>
George, Ariel Wellington . . . . .	<i>Boston</i>
Gibson, George William . . . . .	<i>Chicopee</i>
Goldberg, Elias . . . . .	<i>Boston</i>
Grainger, Joseph Francis . . . . .	<i>Cambridge</i>
Greenwood, Austin Ellsworth . . . . .	<i>Lowell</i>
Ham, Helen Willard . . . . .	<i>Middleboro</i>
Harmon, Ernest Linwood . . . . .	<i>Biddeford, Me.</i>
Harrington, Clifton Ward . . . . .	<i>Hathorne</i>
Harrison, Columbus William . . . . .	<i>Boston</i>
Hennessey, William Warren . . . . .	<i>Salem</i>
Hermann, Louis Alfred . . . . .	<i>Boston</i>
Higgins, George Vincent . . . . .	<i>North Abington</i>
Holmes, George Winslow . . . . .	<i>Belfast, Me.</i>
Hughes, Archibald William . . . . .	<i>Providence, R. I.</i>
Innes, Carrie Louise . . . . .	<i>Boston</i>
Kearney, Joseph Patrick . . . . .	<i>Lowell</i>
Keenan, George Francis . . . . .	<i>Boston</i>
Kelly, Louis Samuel . . . . .	<i>Charlottetown, P. E. I.</i>
King, Arthur Wight . . . . .	<i>Hyde Park</i>
Kingsbury, Walter Warren . . . . .	<i>Walpole, N. H.</i>
Kirkpatrick, Gilbert Stanley . . . . .	<i>Wilmington</i>
Klein, Isaac . . . . .	<i>Boston</i>
Lilley, John Franklin . . . . .	<i>New Bedford</i>
Looney, Edward Michael . . . . .	<i>Salem</i>
Lougee, John Leroy . . . . .	<i>Boston</i>
Luce, Leroy Alson . . . . .	<i>Gaysville, Vt.</i>
Lynch, James Joseph . . . . .	<i>So. Boston</i>
Lynch, William . . . . .	<i>Boston</i>
McCarthy, Lawrence John . . . . .	<i>Rockville, Conn.</i>
McCarthy, Timothy William . . . . .	<i>Rockville, Conn.</i>
McCready, Leo Thomas . . . . .	<i>Providence, R. I.</i>
McDonald, Louis Ronald . . . . .	<i>Charlestown</i>
McGaffigan, Bernard Francis . . . . .	<i>Charlestown</i>
MacGhee, Charles Maxwell . . . . .	<i>Boston</i>
MacNeil, Charles Seward Jadis . . . . .	<i>Boston</i>
MacPhail, John Gunn . . . . .	<i>Boston</i>
Mahoney, Charles Frederick . . . . .	<i>Boston</i>
Mahoney, Walter Francis . . . . .	<i>Hudson</i>
Makller, Moses . . . . .	<i>Boston</i>
Mara, Joseph Lawrence . . . . .	<i>Boston</i>



Marlin, Anna Sarah . . . . .	<i>Boston</i>
Marr, Ben Butler . . . . .	<i>Wilmington</i>
Meehan, Patrick Joseph . . . . .	<i>Lowell</i>
Mehan, Joseph Aloysius . . . . .	<i>Lowell</i>
Monahan, John Terrence . . . . .	<i>Hopkinton</i>
Morse, Irene May, A.M. . . . .	<i>Laramie, Wyoming</i>
Murphy, John Michael . . . . .	<i>Monson</i>
Nickerson, Mary Abbie . . . . .	<i>Cohasset</i>
Nolan, Henry Stuart . . . . .	<i>Somerville</i>
Peters, Solon Wilder . . . . .	<i>Sterling</i>
Phillips, Richard Hornorhas . . . . .	<i>Boston</i>
Pinner, Charles Francis . . . . .	<i>Boston</i>
Pitkin, Edith Winifred . . . . .	<i>Albany, N. Y.</i>
Raymond, Charles Stanley . . . . .	<i>Providence, R. I.</i>
Reeves, William Arthur . . . . .	<i>Lynn</i>
Regan, William Henry . . . . .	<i>Boston</i>
Roughan, Charles Michael . . . . .	<i>Collinsville</i>
Rushford, Edward Allan . . . . .	<i>Salem</i>
Sanborn Mary Esther . . . . .	<i>Brookline</i>
Segal, Jennie . . . . .	<i>East Boston</i>
Sheehy, Richard William . . . . .	<i>Weymouth</i>
Simms, Herbert Eugene . . . . .	<i>Boston</i>
Spline, Robert Emmett . . . . .	<i>Dorchester</i>
Stammers, Joseph Collins . . . . .	<i>Boston</i>
Stevens, William Russell . . . . .	<i>Marshfield</i>
Stone, William Livingstone . . . . .	<i>Chelsea</i>
Sturnick, Frederick Michael . . . . .	<i>Boston</i>
Sundin, Axel Kassemir Hildebrand . . . . .	<i>Providence, R. I.</i>
Sweeney, Mary Agnes . . . . .	<i>Nashua, N. H.</i>
Taylor, Roy Arnold . . . . .	<i>Waltham</i>
Trottier, Arthur Ovilar . . . . .	<i>Providence</i>
Warren, Thomas Francis . . . . .	<i>Fall River</i>
Welles, Franklin . . . . .	<i>Boston</i>
Wheaton, Horace Frank . . . . .	<i>Cambridge</i>
Whipple, Lewis Allen . . . . .	<i>Essex</i>
Williams, David Lawrence . . . . .	<i>Boston</i>
Wood, Harold Abbott . . . . .	<i>Brockton</i>
Young, Evangelin Wilson . . . . .	<i>Brighton</i>

#### First Year

Adams, Letitia Douglas . . . . .	<i>Cambridge</i>
Albro, Marion Louise . . . . .	<i>Providence, R. I.</i>
Allen, George Bates . . . . .	<i>Lowell</i>
Alleyne, James Douglas . . . . .	<i>Boston</i>

Ballou, Ambrose Roche . . . . .	<i>Quincy</i>
Barnard, Harold Hastings . . . . .	<i>Groton</i>
Barrington, Edwin Russell . . . . .	<i>Boston</i>
Bartlett, Fred Ai . . . . .	<i>Melvins Mills, N. H.</i>
Bennett, Samuel Jackson . . . . .	<i>Waterloo, Canada</i>
Berry, William Christopher . . . . .	<i>Charlestown</i>
Besse, Florence Osmer . . . . .	<i>Provincetown</i>
Blodgett, Merlin Freelan . . . . .	<i>Milford, N. H.</i>
Bonelli, Raymond Peter . . . . .	<i>E. Boston</i>
Bowker, Marion Esther . . . . .	<i>Athol</i>
Brosnahan, Jeremiah Vincent . . . . .	<i>So. Boston</i>
Brown, Louis Raymond, A.B. . . . .	<i>Putnam, Conn.</i>
Burns, Richard Charles . . . . .	<i>Lawrence</i>
Bussey, Joseph Henry . . . . .	<i>E. Boston</i>
Cahill, Thomas Joseph . . . . .	<i>Cambridge</i>
Cahir, Thomas Francis, Jr., . . . . .	<i>Cambridge</i>
Carroll, Arthur Everett . . . . .	<i>Danvers</i>
Carroll, Joseph Arthur . . . . .	<i>Dorchester</i>
Christian, Andrew Forest . . . . .	<i>Cambridge</i>
Cleaves, Harrie Franklin . . . . .	<i>Bar Harbor, Me.</i>
Connor, George Aloysius . . . . .	<i>Cambridge</i>
Cook, James Henry . . . . .	<i>Brookline</i>
Crowley, Jeremiah Alphonsus . . . . .	<i>Boston</i>
Crowley, Robert Emmett, Jr. . . . .	<i>Lowell</i>
Dainty, George Wood . . . . .	<i>Somerville</i>
Daly, John Augustine . . . . .	<i>Andover</i>
Daniels, Ora George, A.B. . . . .	<i>Chelsea</i>
Dobson, William Marshall . . . . .	<i>Duxbury</i>
Doherty, Philip Joseph . . . . .	<i>Charlestown</i>
Donnell, Herbert Anthony . . . . .	<i>Forest Hills</i>
Doonan, Henry Edward . . . . .	<i>Wellesley</i>
Dunn, D. Moore . . . . .	<i>Roxbury</i>
Dunn, Thomas Bercil . . . . .	<i>Boston</i>
Drysdale, Ronald Scott . . . . .	<i>Boston</i>
Ellison, Daniel James . . . . .	<i>Central Falls, R. I.</i>
Fallon Thomas Francis . . . . .	<i>Worcester</i>
Fitzpatrick, James Joseph . . . . .	<i>Salem</i>
Flood, Ida Mae . . . . .	<i>Clinton, Maine</i>
Forsyth, James Perkins . . . . .	<i>Philadelphia, Pa.</i>
Friel, John Joseph . . . . .	<i>Boston</i>
Gaffney, Mary Evangeline . . . . .	<i>Salem</i>
Gardella, Bartholomew Anthony . . . . .	<i>Boston</i>
Gates, Raymond Eugene . . . . .	<i>E. Dedham</i>
George, Alvin . . . . .	<i>Boston</i>

Gettings, James Henry . . . . .	<i>Fall River</i>
Giovannetti, Humbert Adrian . . . . .	<i>Port Morien, Cape Breton</i>
Glen, Cornelius Leonard . . . . .	<i>Pawtucket, R. I.</i>
Glynn, William Clinton . . . . .	<i>Clinton</i>
Haché, Henry Clement, M.D. . . . .	<i>Somerville</i>
Hadley, Amos William . . . . .	<i>Worcester</i>
Hanlon, David Edward . . . . .	<i>Hyde Park</i>
Hatch, Ernest Downing . . . . .	<i>Boston</i>
Herne, Leonard Garland . . . . .	<i>Rockport</i>
Higgins, Aaron Locke . . . . .	<i>Rockland</i>
Hill, Harry Joseph . . . . .	<i>Boston</i>
Holway, Ernest Fletcher . . . . .	<i>Cambridge</i>
Hopkins, Alice Josephine Biggs . . . . .	<i>Chelsea</i>
Hopkins, George Richard . . . . .	<i>Medford</i>
Howland, George Lewis . . . . .	<i>Boston</i>
Hunt, William Elliot . . . . .	<i>Bridgewater</i>
Irving, Harry . . . . .	<i>Providence, R. I.</i>
Kelley, Edward Paul . . . . .	<i>Woburn</i>
Kelly, Alice Elizabeth . . . . .	<i>Dorchester</i>
Kerrigan, Joseph Henry . . . . .	<i>Woburn</i>
Knudson, Marie Mette . . . . .	<i>Waltham</i>
Lanpher, Howard Arthur . . . . .	<i>Roxbury</i>
Light, Everett Elmer . . . . .	<i>Waterville, Me.</i>
Lima, Joseph Jacome Travossos . . . . .	<i>Fall River</i>
Lynch, Daniel Lawrence . . . . .	<i>Jamaica Plain</i>
Lyons, Frederick Lawrence . . . . .	<i>Charlestown</i>
McColgan, John Cornelius . . . . .	<i>E. Boston</i>
McCarthy, Charles Andrew . . . . .	<i>Boston</i>
McConville, Frederick Walter . . . . .	<i>Boston</i>
McDonald, Ronald John . . . . .	<i>Cambridge</i>
McIntire, Frederick Joseph . . . . .	<i>Lynn</i>
MacPherson, Lauchlin . . . . .	<i>Upper So. River, N. S.</i>
McQuade, Lewis Steele . . . . .	<i>Dorchester</i>
McTiernan, James Michael . . . . .	<i>W. Quincy</i>
Maglathlin, Leon Edward . . . . .	<i>West Bridgewater</i>
Mains, Herbert Llewellyn . . . . .	<i>Danvers</i>
Manley, Francis Michael . . . . .	<i>Brookline</i>
Mannix, Louis Edward . . . . .	<i>Worcester</i>
Margot, Frederick Eugene . . . . .	<i>Jamaica Plain</i>
Marion, Otis Daniel . . . . .	<i>Jamaica Plain</i>
Maroney, Joseph Patrick . . . . .	<i>Franklin</i>
Marr, Myron Whitmore . . . . .	<i>Dorchester</i>
Martin, John Foley . . . . .	<i>Boston</i>
Merrifield, Chester Arthur . . . . .	<i>Stoneham</i>

Mintz, Samuel Charles . . . . .	<i>E. Boston</i>
Mitchell, Howard Dykeman . . . . .	<i>Chelsea</i>
Moran, Edmund Francis . . . . .	<i>Chelsea</i>
Morgan, Charles Russell . . . . .	<i>Allston</i>
Moulton, Sam Russell . . . . .	<i>Newton Highlands</i>
Myers, Edmund . . . . .	<i>Roxbury</i>
Nettle, Paul . . . . .	<i>Jamaica Plain</i>
O'Brien, Carl Robert . . . . .	<i>Chelsea</i>
O'Connell, Lucy Jane Dorothy . . . . .	<i>Auburn, Me.</i>
Paine, Harland Lloyd . . . . .	<i>Rockland</i>
Patch, Charles Edwin . . . . .	<i>Arlington</i>
Pendexter, Thomas Merritt . . . . .	<i>Amesbury</i>
Perkins, Grace Katherine . . . . .	<i>Groveton, N. H.</i>
Perrault, Joseph Napoleon . . . . .	<i>Manchester, N. H.</i>
Pittinger, Lee Ross, D.D.S. . . . .	<i>Boston</i>
Poole, Lawrence Earl . . . . .	<i>Rockland</i>
Praino, Gaetano . . . . .	<i>Boston</i>
Pratt, William Porter . . . . .	<i>E. Weymouth</i>
Ralph, Wilbur Booth . . . . .	<i>Utica, N. Y.</i>
Reynolds, Carl Edgar . . . . .	<i>Weymouth Heights</i>
Richardson, Carl Engene . . . . .	<i>Marlboro, N. H.</i>
Ricker, Carroll Henry . . . . .	<i>Boston</i>
Robinson, George . . . . .	<i>Concord, N. H.</i>
Roseman, Benjamin Franklin . . . . .	<i>Chelsea</i>
Ross, John Robert . . . . .	<i>Roxbury</i>
Saunders, James Augustine . . . . .	<i>Lowell</i>
Sawyer, Earle Dewey . . . . .	<i>Bridgeton, Me.</i>
Shapiro, Charles . . . . .	<i>Boston</i>
Shaw, John Joseph, Jr. . . . .	<i>Providence, R. I.</i>
Shaw, John William . . . . .	<i>Amesbury</i>
Shealey, Michael Joseph . . . . .	<i>Brockton</i>
Sheehan, George Lucius . . . . .	<i>Franklin Falls, N. H.</i>
Silverman, David Russell . . . . .	<i>Boston</i>
Slattery, Joseph Francis . . . . .	<i>Cliftondale</i>
Slattery, Mary Elizabeth . . . . .	<i>Cliftondale</i>
Smith, Fred Waite . . . . .	<i>Dixfield, Me.</i>
Spaulding, John Doliver . . . . .	<i>Mansfield</i>
Stott, Ardenne Albert . . . . .	<i>Reading</i>
Sutor, Henry Albert . . . . .	<i>Barton, Vt.</i>
Sullivan, Edward Vincent . . . . .	<i>Cambridge</i>
Sullivan, George Francis . . . . .	<i>Worcester</i>
Taft, Annie Elzina . . . . .	<i>Chestnut Hill</i>
Talbot, Frances Louise . . . . .	<i>Peabody</i>

Tighe, Eleanor Marie . . . . .	<i>Keene, N. H.</i>
Troy, Alice Gertrude . . . . .	<i>Worcester</i>
Wallace, James Henry . . . . .	<i>Clinton</i>
Wallingford, Harry Melvin . . . . .	<i>Lewiston, Me.</i>
Watjen, Henry Ernest . . . . .	<i>Pawtucket, R. I.</i>
Werthen, Harry Edson . . . . .	<i>Boston</i>
White, Frank Warren . . . . .	<i>Arlington</i>
Wilson, Edmund Winifred . . . . .	<i>Waltham</i>
Witham, Ernest Clair . . . . .	<i>Westbrook, Me.</i>
Wright, Francis Joseph . . . . .	<i>Roxbury</i>
Wright, William Frank . . . . .	<i>Roxbury</i>
Young, Water Harding . . . . .	<i>E. Dedham</i>

### Special Students

Ceconi, John Aloysius . . . . .	<i>Dorchester</i>
Chipman, Harry Edgar Harrison . . . . .	<i>Arlington Heights</i>
Coffin, Harriet Freeman . . . . .	<i>E. Orange, N. J.</i>
Currier, Richard Doe . . . . .	<i>Boston</i>
Hardwick, Frederick Veazie . . . . .	<i>Quincy</i>
Higgins, Robina Roche . . . . .	<i>Concord, N. H.</i>
Horne, Lester Wallace . . . . .	<i>Norway, Me.</i>
Kelly, John Joseph . . . . .	<i>Dorchester</i>
Kendall, George Ralph . . . . .	<i>Brentwood, N. H.</i>
O'Brien, William Francis . . . . .	<i>Providence, R. I.</i>

# Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

---

## Senior Class

Ash, Henry	<i>No. Weymouth</i>
Askowith, Charles	<i>Boston</i>
Barron, Wilson Darling	<i>Dorchester</i>
Bodge, Frederick Garfield	<i>Tamworth, N. H.</i>
Bonney, Theresa Eva	<i>Somerville</i>
Brigham, Ernest Phipps	<i>Westboro</i>
Brooks, Ernest Robbin	<i>Northfield, Vt.</i>
Brown, Charles Drew	<i>Somerville</i>
Bunker, Jane Graupner	<i>New York, N. Y.</i>
Centervall, Ivan Alexis Teofil	<i>Boston</i>
Chester, Carey Roscoe	<i>Malden</i>
Collins, Stephen Bartholomew	<i>Avon</i>
Davis, Joseph Benjamin	<i>Bridgton, Me.</i>
Davis, Myrton Omer	<i>Worcester</i>
Dearing, Dana Emerson	<i>Randolph, Vt.</i>
Felix, Arthur Mark, B.A.	<i>N. Adams</i>
Fenelon, James Joseph	<i>E. Boston</i>
Francis, Melville F.	<i>Malden</i>
Gibbons, John Joseph, Jr.	<i>Clinton</i>
Gilpatric, Edgar Frank	<i>Biddeford, Me.</i>
Goodrich, Lynn Merton	<i>Oakland, Me.</i>
Grant, Walter Henry	<i>Cambridge</i>
Harrison, Henry Hersey	<i>Boston</i>
Hart, Frederick James	<i>Lowell</i>
Hennessy, Thomas, Jr.	<i>Boston</i>
Jenkins, George Albert	<i>N. Weymouth</i>
Johnson, Alfred LeRoy	<i>Shelburne Falls</i>
Kennedy, John Joseph	<i>Chicopee</i>
King, Jeanette Emma	<i>Boston</i>
LaBelle, Wilfred Mathias	<i>Holyoke</i>
Lunt, Wilbur True	<i>Rochester, N. H.</i>
McKinnon, John Russell	<i>Roxbury</i>
Manster, James Siemel	<i>Roxbury</i>
Montgomery, Frank Willis	<i>N. Adams.</i>
Moran, Philip Frederick	<i>Somerville</i>
Mullin, David Joseph	<i>St. John, N. B.</i>



Osborne, Shelley Barnes . . . . .	<i>Uxbridge</i>
Perrault, Oscar Leon . . . . .	<i>N. Brookfield</i>
Pike, Ezra Barker, Jr. . . . .	<i>Boston</i>
Reynolds, Richard Henry . . . . .	<i>Woburn</i>
Riley, John Joseph . . . . .	<i>Rockland</i>
Rockett, Joseph Bernard . . . . .	<i>Dorchester</i>
Shaughnessy, Emma Elizabeth . . . . .	<i>Newtonville</i>
Smith, Clarence Endicott . . . . .	<i>Frederickton Junc., N. B.</i>
Smith, Harry Monford . . . . .	<i>E. Boston</i>
Smith, Henry Edwin . . . . .	<i>Boston</i>
Stetson, Henry Morgan . . . . .	<i>Cohasset</i>
Story, Ernest Sherman . . . . .	<i>Salem</i>
Streijffert, Thure Gustaf . . . . .	<i>Boston</i>
Thomas, Charles Arthur . . . . .	<i>Somerville</i>
Thorburn, Stanley Burton . . . . .	<i>Boston</i>
Ufford, Eugene Urbane . . . . .	<i>Springfield</i>
Wells, Ernest Leavitt . . . . .	<i>Waltham</i>
Wheeler, George Gilman . . . . .	<i>Providence, R. I.</i>
Whittredge, Eugene Alfred . . . . .	<i>Foxcroft, Me.</i>
Wilkinson, Alvin Thomas . . . . .	<i>Providence, R. I.</i>
Williams, John Hod . . . . .	<i>Norwich, Conn.</i>

#### Also Candidates for the Degree

Atwood, Ira Osmond . . . . .	<i>N. Attleboro</i>
Breslin, John Lawrence . . . . .	<i>Woburn</i>
Bruce, Barnett . . . . .	<i>Portland, Me.</i>
Butler, Charles Carter . . . . .	<i>Pittsfield</i>
Chisholm, Lester Dearborn . . . . .	<i>Bridgewater</i>
Clarke, Charles Peter . . . . .	<i>Ayer</i>
Dowd, Thomas Patrick . . . . .	<i>S. Natick</i>
Fowler, Miles Hartley . . . . .	<i>Dorchester</i>
Gallagher, Charles Aloysius . . . . .	<i>Boston</i>
Gehrunge, Arthur Francis . . . . .	<i>N. Attleboro</i>
Gobie, William Allen . . . . .	<i>Woodstock, Vt.</i>
Gowen, Charles Edwin . . . . .	<i>Dover, N. H.</i>
Hodgdon, Alby Emerson Paige . . . . .	<i>E. Foxboro</i>
Jewett, Elton Sumner . . . . .	<i>Boston</i>
Kiley, Robert Delury . . . . .	<i>Salem</i>
Luce, Maurice Garfield . . . . .	<i>Haverhill</i>
McCarthy, Justin Lawrence . . . . .	<i>Ashland</i>
McGourty, Frederick William . . . . .	<i>Worcester</i>
MacKeon, John Francis . . . . .	<i>Taunton</i>
Mignault, William Theodore . . . . .	<i>S. Boston</i>
Preston, Nathaniel Meservey . . . . .	<i>New Hampton, N. H.</i>

Romanow, Morris . . . . .	<i>W. Somerville</i>
Stegelman, Alfred Gatzor . . . . .	<i>Lewiston, Me.</i>
Whitehouse, Frank Harrison Gower . . . . .	<i>Providence, R. I.</i>
Young, John Maurice . . . . .	<i>Rockland</i>

## Junior Class.

Blagdon, Joseph Michael . . . . .	<i>Charlestown</i>
Brenan, Henry Edward . . . . .	<i>Boston</i>
Carlson, Bertel Gustaf . . . . .	<i>Worcester</i>
Caswell, Fred. Calvin . . . . .	<i>Brockton</i>
Cole, Charles Cummings . . . . .	<i>Boston</i>
Dary, Lewis Brown . . . . .	<i>Pawtucket, R. I.</i>
Dickinson, George Granville Parker . . . . .	<i>Harvard</i>
Dowd, Harry Irving . . . . .	<i>Torrington, Conn.</i>
Dunleavy, John Eugene . . . . .	<i>Uxbridge</i>
Fanning, Arthur Oscar . . . . .	<i>Salem</i>
Finnegan, George Francis . . . . .	<i>Waltham</i>
Gately, John Francis . . . . .	<i>No. Grafton</i>
Gould, Arthur Richard . . . . .	<i>Brockton</i>
Hill, Hugh Thomas . . . . .	<i>Boston</i>
Horn, Robert . . . . .	<i>Southville</i>
McGlew, Charles Ketlewell . . . . .	<i>Salem</i>
McTernen, Malcom Bodwell . . . . .	<i>Andover</i>
Mahoney, James Francis . . . . .	<i>Waltham</i>
Marr, Thomas Edward . . . . .	<i>Waltham</i>
Mullin, Charles Samuel . . . . .	<i>Cambridge</i>
Nash, George Page . . . . .	<i>Lewiston, Me.</i>
Noonan, Kaen Aloysius . . . . .	<i>Roxbury</i>
Potter, George Edwin . . . . .	<i>Greenwood</i>
Roy, Emile Alfred . . . . .	<i>Mittineague</i>
Seagrave, Chauncey Wilcox . . . . .	<i>Uxbridge</i>
Talty, Joseph Edward . . . . .	<i>Woburn</i>
Tuttle, Fred Wilbur . . . . .	<i>Boston</i>
White, Henry Anson . . . . .	<i>Dorchester</i>

## Freshmen

Bacon, Charles Harland . . . . .	<i>Plainville</i>
Barry, Henry Adams . . . . .	<i>Salem</i>
Bigelow, Frank Arthur . . . . .	<i>Whitinsville</i>
Bonnell, Fenwick Clifton . . . . .	<i>St. John, N. B.</i>
Boyd, Walter Lawrence . . . . .	<i>Cambridge</i>
Brigham, Arthur Winsor . . . . .	<i>Boston</i>
Chapman, Frank H. . . . .	<i>Meredith, N. H.</i>
Cheever, Annie Frances . . . . .	<i>N. Attleboro</i>

Conley, George Lawrence . . . . .	<i>Brockton</i>
Connell, Grover Joseph . . . . .	<i>Dorchester</i>
Connolly, Daniel Leo . . . . .	<i>Boston</i>
Cook, William Henry . . . . .	<i>Taunton</i>
Costello, Richard Joseph . . . . .	<i>Cambridge</i>
Crawford, Arthur Archibald . . . . .	<i>Cambridge</i>
Dickey, Gilmore Colby . . . . .	<i>Boston</i>
Dunham, Thomas Denny . . . . .	<i>Barre, Vt.</i>
Eaton, William Henry . . . . .	<i>Somerville</i>
Fitzgerald, Francis Joseph . . . . .	<i>Somerville</i>
Galvin, Thomas Edward . . . . .	<i>Boston</i>
Grant, Ethel Edna . . . . .	<i>Boston</i>
Harding, Arthur Clement . . . . .	<i>Cambridge</i>
Hickey, Daniel Francis . . . . .	<i>Boston</i>
Ingalls, Byron Grayson . . . . .	<i>Whitinsville</i>
Jones, Warren Reese . . . . .	<i>Stoneham</i>
Keefe, Daniel Edward . . . . .	<i>Athol</i>
Kensell, Frederic Albion . . . . .	<i>Whitefield, Me.</i>
Kerrigan, Joseph Patrick . . . . .	<i>Cambridge</i>
King, Frank Collin . . . . .	<i>Chipman, N. B.</i>
LaFlamme, Joseph Leopold . . . . .	<i>Cambridge</i>
Lambert, Horace Porter . . . . .	<i>Chelsea</i>
Lowe, Arthur Stanley . . . . .	<i>Springfield</i>
Lyons, Joseph Vincent . . . . .	<i>So. Boston</i>
Lyons, James David . . . . .	<i>Hamilton, N. Y.</i>
MacCaleb, Ernest Wonson . . . . .	<i>Gloucester</i>
MacCorry, Henry Stuart . . . . .	<i>Boston</i>
Mahan, Joseph Ambrose . . . . .	<i>Natick</i>
Mallett, Francis Ernest . . . . .	<i>Chelsea</i>
Martin, Arthur Simeon . . . . .	<i>Manchester</i>
Massicotte, Joseph, Jr. . . . .	<i>Webster</i>
McDonell, Fred William . . . . .	<i>Montreal, P. Q.</i>
McGee, Timothy Lawrence . . . . .	<i>Worcester</i>
McGrath, George Henry . . . . .	<i>Weymouth</i>
McIntosh, Arthur Herbert . . . . .	<i>Melrose</i>
Melanson, Thomas . . . . .	<i>Corberrie, N. S.</i>
Miett, Elmer Peter . . . . .	<i>Haverhill</i>
Montgomery, William Edward . . . . .	<i>Natick</i>
Morgan, Daniel Joseph . . . . .	<i>So. Boston</i>
Murphy, George Arthur . . . . .	<i>St. John, N. B.</i>
Murphy, James Patrick . . . . .	<i>Natick</i>
Neary, John Thomas . . . . .	<i>Southboro</i>
Neely, Durostus Wesley . . . . .	<i>Somerville</i>

Oliver, Alton Elihu . . . . .	<i>So. Braintree</i>
Pierce, William T. . . . .	<i>Gardiner, Me.</i>
Phillips, Warren Luscomb . . . . .	<i>Salem</i>
Pofcher, Simon . . . . .	<i>Everett</i>
Richardson, Henze Sumner . . . . .	<i>Mt. Desert, Me.</i>
Ricker, Albert Winslow . . . . .	<i>Cochituate</i>
Riley, William Henry . . . . .	<i>Woodstock, Vt.</i>
Riordan, Warren Paul . . . . .	<i>Lowell</i>
Risegari, Hector George . . . . .	<i>Boston</i>
Robbins, Walter Bartlett . . . . .	<i>So. Braintree</i>
Rock, Timothy Francis . . . . .	<i>Nashua, N. H.</i>
Ross, Philip Knight . . . . .	<i>Gorham, N. H.</i>
Searle, Stephen Nourse . . . . .	<i>Bellows Falls, Vt.</i>
Stuart, Charles Sprague . . . . .	<i>So. Paris, Me.</i>
Tingley, George Wright . . . . .	<i>Moncton, N. B.</i>
Tuttle, Howard Knowlton . . . . .	<i>So. Acton</i>
Underwood, Edith Marion . . . . .	<i>Allston</i>
Watson, Scott Emery . . . . .	<i>Stoneham</i>
Wheeler, Ralph Deming . . . . .	<i>Pittsfield</i>
White, Paul Gardiner . . . . .	<i>Boston</i>
Whitney, Carl Harvey . . . . .	<i>Somerville</i>
Wing, Ernest Wellman . . . . .	<i>Hyde Park</i>

### Special Students

Brosnahan, James Leo . . . . .	<i>Boston</i>
Fraher, Michael Joseph . . . . .	<i>So. Boston</i>
Frost, William Mason . . . . .	<i>Haverhill</i>
Hackett, Ephriam Russell . . . . .	<i>Kingfield, Me.</i>
McInnes, George Francis . . . . .	<i>Cambridgeport</i>
Taylor, Ernest Bossuet . . . . .	<i>Waltham</i>

### Post-Graduate Course

Dixon, Joseph Reynolds, D.M.D. . . . .	<i>Boston</i>
----------------------------------------	---------------

## The Summer School at Tufts College\*

---

d'Amaral, Joseph, <i>Mathematics</i>	
Angel, Frank James, <i>English</i>	
Frost, Jennie Clifton, <i>English</i>	Arlington
Galarneau, Dennis Camille Amédée, <i>English</i>	
Hadley, Norris Edmund, <i>Mathematics</i>	
Lunt, Eliza Hosmer, <i>English</i>	50 Curtis St., W. Somerville
Mason, Joseph Eaton, <i>English</i>	Chicago, Ill.
Maulsby, Harriet Wehner, <i>English</i>	80 Curtis St., W. Somerville
Maulsby, Lillian Ayer, <i>English</i>	80 Curtis St., W. Somerville
Proctor, Fred Willis, <i>Mathematics</i>	
Raspe, Otto Steinehofer, <i>English</i>	
Todd, Arthur Oswald, <i>Mathematics</i>	
Wells, Gladys, <i>Mathematics</i>	Troy, N. Y.

---

\* When specific address is not given, the students are registered undergraduates.

# Summary

## CORPS OF INSTRUCTION

Emeritus . . . . .	2	
President and Professors . . . . .	49	
Assistant Professors . . . . .	15	
Demonstrators . . . . .	3	
Instructors . . . . .	47	
Lecturers . . . . .	7	
Assistants . . . . .	27	
Laboratory Assistants . . . . .	25	
Total engaged in work of instruction . . . . .	—	175
Other Officers, not previously counted . . . . .		11

## STUDENTS

### COLLEGE OF LETTERS:

Graduate . . . . .	6	
Senior . . . . .	62	
Junior . . . . .	62	
Sophomore . . . . .	75	
Freshman . . . . .	91	
Special . . . . .	13—	309

### DIVINITY SCHOOL:

Fourth Year . . . . .	1	
Third Year . . . . .	4	
Second Year . . . . .	5	
Special . . . . .	2	

### FIVE-YEAR A.B.-B.D. COURSE:

Third Year . . . . .	4	
Second Year . . . . .	1—	17

### MEDICAL SCHOOL:

Fourth Year . . . . .	45	
Third Year . . . . .	77	
Second Year . . . . .	122	
First Year . . . . .	147	
Special . . . . .	10—	401

### DENTAL SCHOOL:

Graduate . . . . .	1	
Senior . . . . .	82	
Junior . . . . .	28	
Freshman . . . . .	73	
Special . . . . .	6—	190

SUMMER SCHOOL AT TUFTS COLLEGE . . . . .	13	
BROMFIELD-PEARSON SCHOOL . . . . .	20	

Total number of students . . . . .	950	
Names appearing twice . . . . .	8	



The following persons carried on work at the Harpswell Laboratory,  
during the Summer of 1903:—

George A. Bates, D.D.S.

*Professor of Histology, Tufts College Medical School*

Dorothy M. T. Brown

*Special Student, Tufts College*

Frank S. Collins

*Malden, Mass.*

Emily Ray Gregory, Ph.D.

*Professor of Biology, Wells College*

J. S. Kingsley, Sc.D.

*Professor of Biology, Tufts College*

F. D. Lambert

*Instructor in Biology, Tufts College*

Lulu Packer

*Newark, New Jersey*

Grace O. Peterson, A.B.

*East Boston, Mass.*

Edward L. Rice, Ph.D.

*Professor of Biology, Ohio Wesleyan University*

Fred W. Thyng

*Olmstead Fellow in Natural History, Tufts College*

Borden S. Veeder

*Student, University of Pennsylvania Medical School*

C. B. Wilson

*Professor of Natural Science, Westfield Normal School*

Naohide Yutsu, Ragakushi

*Fellow in Biology, Columbia University*

# DEGREES AND HONORS

1902-1903

# Forty-Seventh Annual Commencement

*June 17, 1903*

## DEGREES CONFERRED

### HONORARY

#### Doctors of Laws

CARROLL DAVIDSON WRIGHT

HENRY CLAY IDE

CHARLES HIAL DARLING

#### Doctors of Sacred Theology

JAMES SHRIGLEY

CHARLES HUNNICUTT PUFFER

VINCENT EATON TOMLINSON

JAMES FRANCIS ALBION

#### Doctors of Letters

TIMOTHY THOMPSON SAWYER

WINTHROP LIPPITT MARVIN

#### Masters of Arts

WILLIAM OSCAR CORNELL

DAVID CUMMINGS

EDWARD HALL COLE

JAMES D. PERKINS

BENJAMIN WHITTEMORE

HENRY HEMON WILLIAMS

PAYSON SMITH

### IN COURSE

#### Bachelors of Arts

BLANCHE LOUISE BRUCE

EDITH LINWOOD BUSH (with Honors in Mathematics and in French)

WINBURN SCOTT CANNELL

CHARLES EDWARD CHAPMAN (extra ordinem)

ARTHUR WILLIAM COOLIDGE (with Honors in History and Public Law)

ISABEL HALL COOMBS (with Honorable Mention in History and Public Law and in German)

JOHN ALBERT COUSENS (extra ordinem)

OLIVE ARNOLD DAME (with Honors in English and Honorable Mention in History and Public Law)

LOUISE MELINDA FARNSWORTH (with Honors in German and Honorable Mention in English)

GERTRUDE ISABELLE FISHER

CARRIE EDWARDS FOX

EDNA MARY FRIEND

JULIA FRANCES GIBBS (with Honors in Greek)

PHILIP MESERVE HAYDEN (with Honors in Latin)

HARRY ADAMS HERSEY (with Honorable Mention in English)

BEULAH SINCLAIR HIXON (with Honors in Mathematics)

MARY WINSHIP KINGSLEY (with Honors in History and Public Law)

ETHEL FRANCES LITTLEFIELD (with Honors in Greek)

CHARLOTTE RAYMOND LOWELL

LENA ABBIE LYONS (with Honors in Mathematics)

GUY ELWOOD MARION

HARRY TIRRELL MERRITT

ETHEL ALMIRA MOORE (with Honors in French)

ARTHUR MURPHY, JR.

ROBERT EDWARD NASON

LAWRENCE MARSDEN PRICE (with Honorable Mention in History and Public Law)

ETHYL WINNIFRED PUFFER (with Honors in German)

OLIVE KATHARINE RYAN (with Honors in Greek)

STANLEY GATES SPEAR, B.D.

CHESTER BRADSTREET STORY

CHANDLER MASON WOOD (with Honors in History and Public Law and Honorable Mention in Philosophy)

#### **Bachelors of Philosophy**

HANNAH CECILE CROWELL

HENRY PALMER LEWIS

HARRY DELUCE LINSOTT

#### **Bachelors of Science in Civil Engineering**

RALPH ELMORE KIMBALL

OREN McKENNEY MOULTON (with Honorable Mention in Civil Engineering)

#### **Bachelors of Science in Electrical Engineering**

ASHTON BARDOLPH COOPER

SAMUEL THOMAS HALL

THOMAS SAWYER KNIGHT

LEONARD LAURIAT

HARRY STANLEY PAGE

#### **Bachelor of Science in Biology**

OSCAR SLADE CREELEY

#### **Bachelor of Science in General Science**

CLARENCE PRESCOTT BEARCE

**Bachelors of Sacred Theology**

CHARLES MASSON ANDREWS, B.S.

JOHN MERRILL PAIGE, B.D.

**Doctors of Medicine**

CHARLES WILSON AVERELL, A.M.

IDA BELLE BAKER

LILY OWEN BAKER

GEORGE WASHINGTON BARRETT

CHARLES EDWARD BUCK, PH.G.

GEORGE KITTREDGE BUTTERFIELD

BERTRAM HORACE CASWELL

FRANCIS BERNARD CONWAY

MAURICE EDWARD COTTER

RICHARD COULSON

MARY SIBYLLA CROSWELL, A.B. (cum laude)

JEREMIAH JAMES DALY

GEORGE WILLIAM DERRICK

CHARLES HARLAND DOWNING (cum laude)

EOLINE BEATRICE CHURCH DUBOIS

CREIGHTON FERGUSON

PATRICK JOSEPH FLEMING

GEORGE HARTLEY GORHAM

MARY ELIZABETH HALSALL

FRANK EUGENE HASKINS, PH.G.

CHARLES MICHAEL JACOBS

JAMES HENRY JOYCE

WILLIAM BASIL KEELER

ISABELLA DICKIESON KERR

HENRY GLOVER LANGWORTHY

WILLIAM FRANCIS LAWTON

FAITH CURTIS MEDLAR

FRANK HENRY McELROY

EDMUND JOHNSON McNEIL, JR.

HELEN ABBOTT MICHAEL

ETHEL SUSANNA MITCHELL

JOHN AMBROSE MONAHAN

EDWARD MARTIN MURPHY

LORETTA JOY O'BRIEN

JOHN PARR (cum laude)

CHESTER ALPHEUS PAULL

JOHN CORBIN PIERSON

FREDERICK REIS

FLORENCE FRANCES RICE

WILLIAM LITTLEFIELD RIPLEY (cum laude)  
WILLIAM MILTON ROSE  
THOMAS JOHN SCANLAN  
WILLIAM JOSEPH SHEEHAN  
ELIZABETH MARY STICKNEY (cum laude)  
FRANK ALOYSIUS SULLIVAN  
HORACE CHENEY SWAN (cum laude)  
STEPHEN FRANCIS THURBER  
ANNA TOPAZ  
JAMES HENRY TURNER  
BENIZON G. WERNICK  
LOUIS FREDERICK WHEATLEY  
JOHN AUGUSTUS WHITTLE (cum laude)

**Doctors of Dental Medicine**

HARRY PRESCOTT ALLEN  
CARRIE ISABELLE HOUGH BENCE  
BOYD FRANKLIN BOWLES  
WILLIAM LOWELL CARGILL  
GEORGE WILLIAM CARPENTER  
CHARLES REDMAN COLE  
JOSEPH REYNOLDS DIXON  
JOHN HENRY DOOLEY  
ARTHUR WILLIAM DOUBLEDAY  
WILLIAM SNOW DOW  
HARRY ALEXANDER DRAFFIN  
OLIVER KENDALL P. DURGIN  
EDWARD FALL  
ROBERT FARQUHAR, JR.  
CURTIS WILLIAM FARRINGTON  
FRANK JOSEPH GILDAY  
HARRY MYERS GOKEY  
FREDERICK THOMAS GROGAN  
HENRY TAYLOR HARPIN  
LESLIE WOODBURY HARRIS  
GRACE MAUDE HOUGH  
ROBERT CRAWFORD JAMIESON  
VARNEY ALBERT KELLEY  
FRANCIS JESSE LANIGAN  
JAMES LAWTON  
ANTHONY JACOME TRAVASSOS LIMA  
BURT EUGENE LOGWOOD  
GEORGE EDWARD MAHONEY  
WALTER COURTLANDT MASON



FRANK BRUCE MILES  
 JAMES O'BRIEN, JR.  
 IRVING ERSKINE PENDLETON  
 CLARENCE ALBERT PETTENGILL, B.S.  
 FRANCIS XAVIER QUINN  
 SIDNEY BURT SARGENT  
 GEORGE MAURICE SHAW  
 JOSEPH WILLIAM SHAY  
 JAMES HENRY SHILLINGTON  
 HARRY MANOOG SHOOSHAN  
 FRANK WELLS SPROUL  
 ODBER WELSLEY STAPLES  
 JOSEPH SNOW STETSON  
 HOWARD LESTER THORBURN  
 EDWARD WILLIAM TOBIN  
 HAROLD SMITH VILES  
 WINFRED FRANCIS WESCOTT  
 MORSE WIGHTMAN  
 JOHN JOSEPH WREN

#### **Masters of Arts**

VALERIA STONE GOODENOW, A.B. (Biology)  
 MARY WINSHIP KINGSLEY (History and Public Law)  
 ETHEL FRANCES LITTLEFIELD (Greek)  
 LAWRENCE MARSDEN PRICE (History and Public Law)  
 FRED WILBUR THYNG, A.B. (Biology)  
 MARIAN LUCY TITUS, A.B. (English)  
 CHANDLER MASON WOOD (History and Public Law)

#### **Master of Science**

ROBERT HAYWARD PARKE, B.S.

---

#### **Commencement Parts**

ARTHUR WILLIAM COOLIDGE, Cand. A.B.: "Tolerance or Indifference?"  
 CLARENCE ALBERT PETTENGILL, Cand. D.M.D.: "Asepsis in Dentistry."  
 OREN McKENNEY MOULTON, Cand. B.S.: "The Proposed Improvement on the Charles River."  
 MARY WINSHIP KINGSLEY, Cand. A.B.: "Early Missionaries in New France."  
 GEORGE WILLIAM DERRICK, Cand. M.D.: "The Sanatorium in the Treatment of Tuberculosis."  
 CHANDLER MASON WOOD, Cand. A.B.: "The Declaration of Independence One Hundred Years After."\*

## Awards of Prizes, 1902-1903

---

### Goddard Prize in Latin

GUSSANDA COUNTWAY

### Goddard Prize in Mathematics

EVA LILLIAN CHANDLER

### Prize Scholarship of the Class of 1898

RAYMOND KURTZ MORLEY

### Winners of Prizes in the Annual Debate

THE KNOWLTON DEBATING CLUB

### Best Individual Debater

CHANDLER MASON WOOD

### Rhetorical Prizes

#### *First Division*

ROBERT WILLIAM HILL (1)

PERCY SYLVESTER PRINCE<sup>2</sup> (2)

#### *Second Division*

LEON RYDER MAXWELL (1)

BERTHA LOUISE COMSTOCK (2)

#### *Third Division*

CLARENCE ELMORE WATKINS (1)

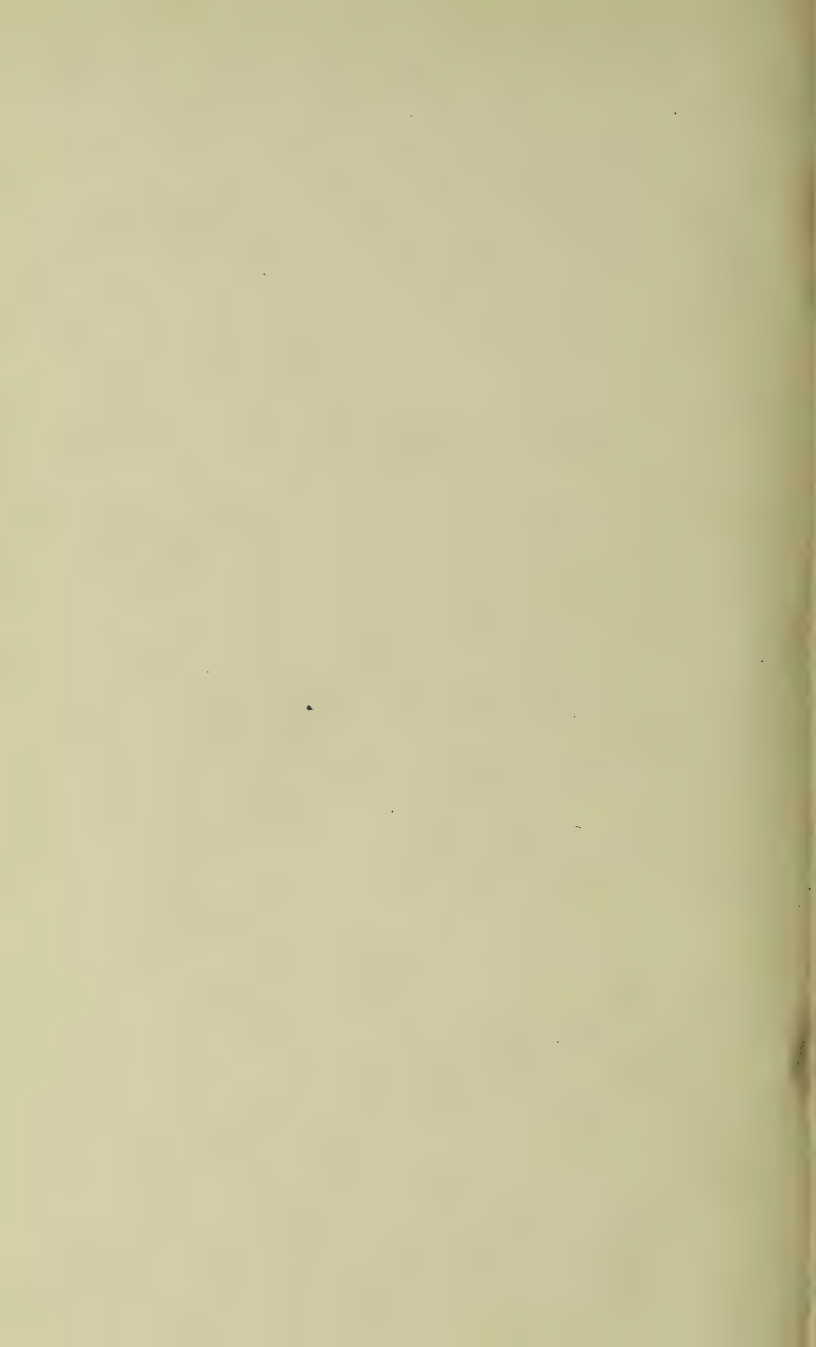
CHESTER BRADSTREET STORY (2)

### Greenwood Prizes in Oratory in the Divinity School

GEORGE ARTHUR MILLER

CHARLES MASSON ANDREWS

SIDNEY JOEL WILLIS



## **PUBLICATIONS OF TUFTS COLLEGE**

---

**GENERAL CATALOGUE**

**ANNUAL REPORT OF THE PRESIDENT**

**CATALOGUE OF THE MEDICAL SCHOOL**

**CATALOGUE OF THE DENTAL SCHOOL**

**CATALOGUE OF THE DIVINITY SCHOOL**

**CATALOGUE OF THE ENGINEERING DEPARTMENT**

**CATALOGUE OF THE BROMFIELD-PEARSON SCHOOL**

**CIRCULAR OF GRADUATE DEPARTMENT**

**ANNOUNCEMENT OF COURSES**

















UNIVERSITY OF ILLINOIS-URBANA



3 0112 114109926